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CONTENTS.

	Page.
Headquarters of the Mining Industry	25
Decision on Patent Limitations	25
Consolidation of Florida Phosphate Mines	25
The United States Geological Survey	25
New Publications	26
Books Received	26
Mining Near Helena, Mont. — John W. Eddy	26
Silver and Tin. — T. A. Rickard	27
The United States Geological Survey. — John F. Blandy	27
The Co-Operative Experiment at the Morning Mine, Idaho, — D. B. Huntley	27
A Classification of Economical Geological Deposits. — W. O. Crosby	28
Mining at Bendigo, Australia. — T. A. Rickard	29
Mineral Production of New Zealand in 1893	30
* Mond's New Process of Obtaining Chlorine	31
* The Late Lord Swansea	32
* A New Device for Making Pipe Joints Tight	32
* Electric Haulage and Signaling	33
Recent Decisions Affecting the Mining Industry	33
Patents Relating to Mining and Metallurgy	34
Personal, Obituary, Societies, Technical Schools, Industrial	35
Notes: Countries in the Postal Union, 30—Tests for Portland Cement, 32—Coloring Matter from Ruthenium, 33—Brown Coal in Galicia, Austria-Hungary, 34—The Walrond Steel Process as Applied to Cast-Steel Horseshoes, 34—Coal Washing, 34—The Dickson Peat Fuel, 34.	

* Illustrated.

MINING NEWS.

Alabama. 36
Alaska. 35
California. 36
Colorado 36
Florida. 37
Idaho. 37
Indian Ter. 37
Kentucky. 37
Michigan. 37
Minnesota 37
Montana. 37
Missouri 38
Nevada. 38
New Mexico. . . . 39
Ohio. 39
Oregon 39
Pennsylvania. . . 39
Utah 39

FOREIGN NEWS.

Bolivia. 39
Br. Columbia. . . 39
Quebec. 40
South Africa. . . 40

LATEST MINING NEWS. 40

MARKETS:

COAL:
New York. . . . 40
Buffalo 40
Chicago. 41
Pittsburg. 41

IRON:
New York . . . 41
Buffalo. 41
Chicago. 41
Pittsburg. 42
Philadelphia. . 42

METALS:
Gold & Silver 42
Other Metals. 43

CHEMICALS AND MINERALS.
New York. . . . 44
Charleston. . . . 44
Liverpool. 44

MINING STOCKS:
New York . . . 45
Boston. 45
Salt Lake City 45
San Francisco. 45
Paris 45
Meetings. 45
Dividends. 45
Assessments. . 47

STOCK QUOTATIONS:
New York. . . . 46
Boston. 46
Duluth. 46
Aspen 46
San Francisco. . 46
Denver 46
Philadelphia. . . . 46
Pittsburg. 46
Baltimore 46
London. 46
Coal Stocks. . . . 46
Ind. and Trust. . 46
Colo Springs . 46
Helena. 47
Shanghai. 47
Salt Lake City. 47
Paris 47
Mexico. 47

CURRENT PRICES:
Chemicals 47
Minerals. 47
Rarer Metals. . . 47
MINING CO'S. . . . 48

ADVT. RATES 18
ADVT. INDEX. 15

THE HEADQUARTERS OF THE MINING INDUSTRY.

We have great pleasure in announcing the opening of headquarters, and cordially extend to our friends from all parts of the world an invitation to make use of them. They will find here files of a great number of papers from the mining districts of this and other countries, and books of reference which can be consulted for information on any question in which they may be interested.

Visitors can have their letters addressed in care of "The Engineering and Mining Journal," P. O. Box 1833, New York, and will find in the headquarters every convenience for correspondence.

In another column, Mr. D. B. Huntley tells the story of the beginning and the end—for the present—of the co-operative experiment at the Morning mine, Idaho. Success was hardly to be hoped for under the conditions prevailing in the Cœur d'Alenes at the present time, but it is to be hoped that the attempt will be renewed elsewhere, in a more promising field. The letter referred to presents some interesting points for mining superintendents and miners to consider.

A decision which is of considerable importance to all interested in patent rights has recently been rendered by the Supreme Court of the United States. The judgment of this court is that the State statute of limitations runs against claims arising from alleged infringement of patents as well as other transactions. Hitherto there have been a number of decisions in the Circuits Courts, some holding that the State statute did, and others that it did not form a satisfactory defense. This is now finally decided, and will put to rest much litigation now in progress.

We have on several occasions referred to the proposed consolidation of the phosphate interests in Florida and the benefit which the industry might derive if intelligently managed. After numerous attempts in the past, which have resulted in nothing, a company has now been formed consisting of four large producers, owning in all about 24,000 acres of phosphate lands, and having an output which is stated at about 125,000 tons pebble phosphate, or over 70 per cent. of the total product of the State. Whether or not this consolidated pebble mining company will be able to draw into it the remaining pebble and hard rock producers remains to be seen. Unless it does it is doubtful if much good can be accomplished. According to the statistics of production as given in Vol. II. of the "Mineral Industry," the total pebble output of the State in 1893 was 165,945 tons, and of hard rock 245,851 tons; so the company represents only 30 per cent. of the State's total. This is not sufficient to enable it to carry out plans for rehabilitating the industry. To do this it is necessary that the majority of producers should come to an understanding as to prices, and particularly as to the methods of selling abroad. At present foreign purchasers accept a cargo subject to their own analysis, and if this does not agree with that made by the sellers they may decline to receive it, and as the expense of reshipping is too great, the shipper is compelled to offer it at a heavy reduction. This and other matters which would tend to place the phosphate industry on a more solid basis might all be brought about by an understanding among producers, and in time this will, no doubt, be accomplished. The new consolidation may be the means of bringing this about, either by absorption or example, but until it does it cannot be expected that phosphate producers will derive from the industry the results which it can be made to yield. In view of the growing competition from the Tennessee phosphates at home, and the Algerian product abroad, it is to be hoped that some active steps may soon be taken.

THE UNITED STATES GEOLOGICAL SURVEY.

On another page we publish a letter from the well known, experienced engineer and geologist, Mr. John F. Blandy, formerly territorial geologist of Arizona. No man in this country can speak with higher authority on the topography and geology of Arizona, or as to the character of the work done by the United States Geological Survey in that field.

We select this illustration of the work of the Survey for present publication, not because it is exceptionally bad, for we have many other examples of like character, but because it represents a territory under the administration of the general government, and a district with which the United States Geological Survey is supposed to be very familiar and where it has expended large sums of money.

The map referred to by Mr. Blandy has Prescott, Ariz., about in its center, and is beautifully drawn and engraved. We desired to have it photographed and printed here, but the brown and faint contour lines do not reproduce well in photo plates.

Across the face of this map Mr. Blandy has written as follows: "Granite Peak (N. W. from Prescott) probable error of 1,500 to 2,000 ft. The ascent is from the N. W. side; the east side is too steep and rugged to be climbed" (the map shows an entirely different contour).

"The contour lines of this map are worthless. The altitudes of the

several stations are in general about correct as far as I have noticed them, but in the contours of the mountains there is hardly anything that is recognizable. Having crossed a very large area of the country covered by this map on foot I know whereof I speak. I can cross the mountains in any direction without being lost, but I am unable to even trace the prominent water-courses with the aid of this picture. To give a single instance, the two bold mountains of Del Pasco at the north end of the Bradshaw mountains are very conspicuous with very precipitous sides to the north and west, and the deep Bradshaw Basin immediately to the south, as it even under them cannot be seen on the map. The errors are so many that I cannot attempt to enumerate them, and need only say the sheet is worthless. John Blandy, M. E."

Would it not be infinitely better to describe correctly the geology of the country than to squander these immense sums in making pretty "pictures" of what does not exist?

There are many reasons why so large a part of the Survey's work is bad. It is not now necessary to go into this question: it suffices to say that while there are some very capable men in the several departments of the Survey, and that much of the instrumental work is good, the topographical work is in large part very bad, so bad indeed that much of it is absolutely worthless, and the money so lavishly spent upon it is altogether wasted. In the present deplorable condition of the United States Treasury, we commend this as a field in which very important savings may be made without in any way injuring the interests of either science or industry.

The annual appropriations made or asked for the Survey are as follows:

	1894.	1895.
For salaries and general expenses, etc., including $15,000 for preparing report of mineral resources	$421,690	$422,690
For salary of director and clerks, etc	31,390	33,390
For salary of executive officer	3,000	?
Rent	10,000	10,000
Engraving and printing monographs	35,000	35,000
In deficiency bill	1,000	?
	$501,990	?
Stationery (an indefinite part of $52,500)		?
Land Office survey		$75,000

This may not be the whole, for it is difficult to find out what the Survey does cost. In addition to this half-million dollars, the Survey draws from the treasuries of several States quite large sums, and much of the best work which appears on the United States maps is State survey or private individuals' work. If one-fourth of this large amount were expended in legitimate geological work, both the country and the Survey would be gainers.

The apparent policy of the United States Geological Survey is to gradually crowd out the State Geological Surveys and make a great central government monopoly of the geological work, as of the mineral statistics, with immense appropriations, in lobbying for which the Survey has long had a high reputation. It is not to be expected that this purpose will be avowed or even admitted, but motives are better judged by actions than by words, and the actions of the United States Geological Survey all point in this direction. This is a policy which is altogether to be condemned, and all the more so when the work done is not only extremely costly, but is also unreliable.

The Survey seems to care little about the cost of its work; it spurns better work when offered to it at a small part of the cost of its own, because it would leave fewer places to fill with favorites. We make no such serious charges without the proofs of their accuracy.

The "Engineering and Mining Journal" desires to see the United States Geological Survey improved and continued, and unless it is improved public opinion will undoubtedly call for its abandonment. We hold as of the utmost importance that our State Geological Surveys should be independent, and not be interfered with, much less imperiled, by the United States Geological Survey; and we believe it is only a detriment to and a misdirection of the U. S. Geological Survey to perform such work as testing road material, advising as to the same, collecting or publishing technical treatises and market reports, and spending sums of money in collecting statistics already collected, and which it can buy for a few dollars in any book store.

Is such an expenditure simply a waste of the public money? We believe it is much more than this. When the United States Geological Survey returns to the performance of its ligitimate work and does this well, it will have no warmer friend than the "Engineering and Mining Journal."

NEW PUBLICATIONS.

CHEMICAL AND METALLURGICAL HANDBOOK. By J. H. Cremer, M. E., and G. A. Bicknell B. Sc. Published by the authors, Cleveland, O. Pages 820.

In this work the aim of the authors has been to give to chemists and metallurgists a handbook such as civil and mechanical engineers have in Trautwine, Molesworth, Haswell and others. In this they have succeeded very well so far as they have gone, but the book is not nearly so complete as might be desired, and, further, contains some lengthy tables which will seldom be referred to. Taken as a starting point for future and enlarged editions, however, the work is to be commended, and will be found useful to many engaged in the iron industry. The space devoted to mensuration and weights and measures is not nearly so extensive as might be desired, and in the latter two, fuller tables of conversion into and from the metric system would have been useful. Much handy data are given under heat. The table of factors with which to calculate the results of analysis is convenient, but contains nothing which has not already been printed in more convenient form for ready reference. Some excellent and useful data are given under the head of reactions of the metallic salts, and the following tables of molecular weight, gravity, etc., are well worked out and very convenient for reference. The specific gravity of solutions of varying strength in different salts is given, and following it are three tables showing the per cent. of phosphorus, silicon and sulphur in different weights of magnesia pyro-phosphate, silica and barium sulphate. A table showing the composition, crystallization, hardness, specific gravity and some of the properties of various minerals is given, but might to advantage be enlarged to embrace some of the more important reactions with acids and by blowpipe. The moisture and phosphorus tables given farther on, showing in one case the percentage of iron in moist ore as calculated from amount in dry ore, and in the other the percentage of phosphorus in pig iron, calculated from amount in ore, are useful occasionally. Another table is given showing the unit weight of ore wanted to make one unit of pig iron. This is calculated on the basis of 93·75% iron in pig iron, no allowance being made for loss in cinder and various other ways. In practice it is usually found that two tons of a 50% ore will yield but a trifle, if any, over one ton of pig; whereas, according to this table, it would give 6·25 tons over on each 100 tons pig. Theoretically it is all right, but it would have been better had it been calculated on the basis of practical results, or at least with an additional column giving such results. The same is true of the table following giving the pounds of ore of varying percentages required to make one ton of iron. With a 40% ore it is calculated here that 5,250 lbs. will make 2,240 lbs. pig. In the general run of practice, 5,600 lbs. would be counted necessary. Some of the other tables giving factors for the calculation of blast furnace mixtures and slags are convenient, particularly one showing the per cent. available lime and magnesia in limestones.

Taken as a whole, the book gives much useful data and forms a good starting point for a more ambitious work.

BOOKS RECEIVED.

In sending books for notice, will publishers, for their own sake and for that of book buyers, give the retail price? These notices do not supersede review on another page of the Journal.

Uber das Verhalten der Thomas-Stahlschienen im Betriebe. By Prof. L. Tetmajer. Zurich, Switzerland; E. Speidel. Pages 84, with tables. Price (in Switzerland) 2·50 francs.

United States Bureau of Education: History of Higher Education in Rhode Island. By William Howe Tolman. Washington; Government Printing Office. Pages, 210; illustrated.

CORRESPONDENCE.

We invite correspondence upon matters of interest to the industries of mining and metallurgy. Communications should invariably be accompanied with the name and address of the writer. Initials only will be published when so requested.

Letters should be addressed to the MANAGING EDITOR.

We do not hold ourselves responsible for the opinions expressed by correspondents.

Mining Near Helena, Mont.

EDITOR ENGINEERING AND MINING JOURNAL:

Sir: Within 15 miles, and southerly from this city, is a bit of country, say three miles wide and about six in length, that ranks above any other locality of equal extent yet found in this State as a high-grade ore producer. Two years ago the Merrill-Miller Mining Company began work on the Liverpool Mine in Lump Gulch. At the surface the pay streak was from 1 to 1½ in. wide. At 50 ft. it had increased to between 4 and 6 in. At 100 ft. it had widened from 6 to 8 in. At 300 ft. it is now 2 ft. wide, and averages 200 oz. of silver per ton and 12% lead. The shaft is now down 375 ft. The hoist has a good 600-ft. capacity.

At 200 ft. of depth a level was run along the vein on ore for a distance of 500 ft. without a break in it. Recently this company purchased the Washington location, adjoining the Liverpool and across a corner of which runs the Liverpool lode. The distance traversed by the lode across the Washington will measure about 240 ft., and for 130 ft. of that distance the lode has been opened and found to contain the same ore as the Liverpool. When the Washington was purchased it was under lease to parties who are now operating it until May next, but I understand that the purchase money will all be paid back to Merrill & Miller by January 15th.

Further up the gulch, about two miles, is the Free Coinage Mine, owned by Prescott & Smith. Their shaft is not yet 100 ft. deep, and only one small carload of ore has been shipped, but the ore is very rich. Adjacent to the Free Coinage is the Little Alma, owned by Doctors Treacy and Pleasants, and from this lode the same character of ore is being shipped. Opposite the Free Coinage, on the south side of the creek is the Little Nell lode, owned by Bell & Head. The shaft is now down about 200 ft., and it is claimed that the ore is 3 ft. wide, from which shipments are now being made. Very rich specimens of ruby silver are found in this mine and the shipments are high grade, averaging about 200 oz. per ton. In some of the shipments the zinc amounts to 20% of the product, but the richest ore carries the most of the zinc.

The King Solomon mine is on Clancy Creek, about two miles from Lump Gulch, and has a shaft 200 ft. deep. It is under lease and bond to Whittaker, Miller & Wilcox. The first 18 tons of ore shipped netted the lessees $2,111, and 11½ tons just in nets $1,176.

There are seven steam hoists now in that district, and several more contemplated in the near future. There were 24 carloads of ore shipped out of that camp last week over the railroad which runs through it and furnishes the cheapest transportation facilities. This amount is above the average week, because a large accumulation of what is called second grade ore has been sent out on cheap contract rates recently.

Our output of gold has increased at least 70% during the last year, and I think the next year will show as large an increase over this.

HELENA, Mont., Dec. 13, 1894. JNO. W. EDDY.

Silver and Tin.

EDITOR ENGINEERING AND MINING JOURNAL:

Sir: The decline in the price of tin threatens to kill the mining industry of Cornwall. An inquiry into the causes which have brought about this unfortunate condition brings us, as do most of the economic inquiries of the day, face to face with the silver question. Financiers may rage and bankers imagine a vain thing, but the issue between a contracting, stifling gold monometallism and an elastic, invigorating bimetallism is one which meets them at every turn of the pathways of commerce.

The fall in the value of tin (now selling for about £62 per ton in London) and the threatened destruction of one of the oldest and most conservative of European mining industries are due to the effects of depreciation in exchange upon the production of tin in the Straits Settlements. During the year 1893 the English mines produced 9,000 tons, the Straits Settlements 39,670 tons, while the entire world's production of tin was 67,864 tons. The output of the Straits has steadily increased for the last decade, more particularly during the past five years.

The fall in exchange, due to the closing of the Indian mints and the repeal of the Sherman act, has been of immediate assistance to the tin operator in the far East. The latter pays his men in depreciated silver, but himself is paid by London merchants in appreciated gold. The divergence in the value of the metals is all in his favor. By adding materially to his gains the low price of silver enables him to work mines hitherto unprofitable. The Cornish mineowner, on the contrary, pays and is paid on a gold basis alone; he derives no benefit from the fall in exchange, but becomes the sufferer by the fact that while his costs of mining are not diminished, the value of his product is being rapidly lessened by reason of the cheapness with which his Eastern competitor can operate.

Is not this an instructive example of the injustice and absurdity of the present condition of the monetary standards?

It is not the silver miner of Colorado, the farmer of Dakota, the tin operator of Cornwall, the cotton spinner of Manchester, or any one small section of any community that is alone suffering or going to suffer. No thoughtful man observing the trend of events and examining the logic of facts can avoid the conviction that this question of the money standard is the widest reaching that the world has ever been called upon to consider. Time was—not very long ago—when a few mineowners in Colorado and Nevada were supposed to be engaged in a local struggle for the maintenance, by favorable financial legislation, of a particular industry. It may be that enlightened self-interest was the mainspring of their action, but if they took the lead it was only because they were the first to suffer and therefore the first to understand. All the commercial and industrial world is now in the toils. The question has assumed proportions formerly undreamed of.

General Hancock said that the tariff was a local issue. So it may seem to most students of political economy, but most assuredly nothing is more true than that the very converse is true of the money question—that concerns every land. In the recent election in Colorado nothing was more marked than the change in the spirit with which the silver question was approached. Senator Teller and other Colorado men of national reputation have long abandoned the narrow ground of local interests and now advocate bimetallism as the solution of a problem affecting not Colorado alone, not the United States alone, but humanity itself.

If our friends in the East still look askance at the advocates of bimetallism and retort with the wearisome platitude that it will make the silver-mine owner rich, then I would reply in the words of Mr. Henry Chaplin, "Do you starve or freeze yourselves in the winter in order to prevent the owners of coal mines from becoming rich?" and, I would add, starved most assuredly will be the life of industry and frozen the swift currents of commerce unless the enfeebling and freezing influences of a contracting currency are speedily checked by a return to a system which has history, science and existing conditions to plead for its restoration.

T. A. RICKARD.

RICO, Dec. 15, 1894.

The United States Geological Survey—How Its Work is Done.

EDITOR ENGINEERING AND MINING JOURNAL:

Sir: Herewith I send you a sheet of the United States Geological Survey topographical map of Arizona, marked "Prescott Sheet, Surveyed in 1885." Across the sheet I have written some criticisms, which will explain themselves. Whether this is an average specimen of the work done by the corps, I will not pretend to say, but in my remarks shall only refer to that section of the field with which I am acquainted and leave the criticisms of the other parts to those who are familiar with them.

The first use I attempted to make of the map was upon a trip to Mohave County. I made a copy of part of the county to carry with me for use. The first mining camp that I visited I examined my map and noted on it an adjoining mountain, two miles distant, which was represented as 1,000 ft. higher than the camp. I looked for the mountain and found that I could see across the top of it—about on the level of where I stood. That was sufficient.

I visited the Grand Canon once, going via Aubrey Valley and Pine Spring. I pay particular attention to the topography of a county through which I pass, and on the trip I noted some very distinct objects—valleys and cliffs, which could not escape the notice of a topographer. On my return I tried to locate on the map the route over which I had traveled. This I was utterly unable to do.

Any engineer who has visited the Grand Canon must see at a glance how impossible it is for a small corps to map such a county with any degree of accuracy within a short period of time, and yet we see this pretty picture of the topography, with its contour lines drawn with the regularity with the shingles on the roof of a house. In my judgment it would take a very large corps several years to make an accurate map of such a region. But suppose it were done, of what practical value would it be to anybody? Had the same amount of money and labor been expended elsewhere how much good might have been done. The fact is, that Major Powell and his Grand Canon are the standing subject of merriment to the residents of northern Arizona on account of the amount of labor expended on it and the amount of errors in the work.

In the whole plateau country the only value known to exist is the border line of the coal beds lying on the east side of the Little Colorado River, but in all the work done by the Geological Survey I have not been able to find any reference to it.

Professor Emmons in his article on Arizona in "Mineral Resources, 1892," says "it is an elevated region supporting some forest growth, and as contrasted with the rest of the territory is fairly well watered."

If there is one thing that it is noted for, it is the scarcity of water, as compared with the rest of Arizona, excepting the desert. Professor Newberry said the trouble was it was undermined, and he was right: there are so many deep canons that there is no chance for springs on the plateau. There is plenty of grass, but only sheep, which learn to go a long time without water, can live on it, except the water holes or tanks.

But to return to the maps. How does it come that they are so inaccurate? I spent the year 1885 in the mountains around Prescott. I was much surprised a few years afterward to see a topographical map of that section and "surveyed in 1885." I never met any of the corps who made it, nor did I hear of any of them, and although I have made frequent inquiries since I saw the map, never have I been able to find any one who did see them. I do not pretend to say they were not here. They certainly did not work by night, nor do I think they tried to "work on the sly." Probably the Director-General treated them to a summer vacation with instruction to throw in a little work as a pastime.

To make a long story short, is it not utterly absurd to suppose that a small corps could cover such a field in so short a time? The blow should fall on the heads not of those who tried to do the work, but upon those who sent them to do it. In these remarks I make no reference to those who were engaged in the "Triangulation Survey": of that I know nothing. I have seen but one of their monuments. It is to be presumed that that work was properly done, as it must always be proven by a Q. E. D.

The general Land Office map marks—upon unsurveyed lands—some mountains when it is open plain, and some plains when there are prominent ranges. The map maker has been ingenious enough to draw the mountains in such a way that you can choose the course of the ranges to suit yourself.

As good citizens we are obliged to speak well of the paternal government, but the father should look more carefully to the interest of the children.

Since writing the above, I notice that the Commissioner of the Land Office proposes to lessen the expenses of the Land Department by dispensing with the "Contract System" in surveying the public lands, and placing the surveys under the United States Geological Corps. Does he want to go from the frying pan into the fire? Would it ever get done? How much time would they take in hunting up another unio or bivalve? Would it not be better to send a geologist with every contractor? Then there would be a witness that the survey was made, and the field geology with many notes could be secured at the same time and a geological map obtained. This would be a great point gained. This was the course pursued on the Upper Peninsular of Michigan, and the result was that when the Land Office map was finished every geological formation was accurately marked down.

JOHN F. BLANDY, M. E.

PRESCOTT, Ariz

The Co-Operative Experiment at the Morning Mine, Idaho.

EDITOR ENGINEERING AND MINING JOURNAL:

Sir: As you have at times published news relating to the work at the Morning mine under co-operation, I give you some authentic figures and memoranda which may be of interest to the mining public.

The Morning mine was closed down on December 14th by the local Miners' Union sending a committee to notify me "to stop breaking ore, to take out the ore already broken, to stop work on the co-operative plan, and to stop timbering the mine at co-operative expense."

This was done several days before the accounts for November had been settled; before the November concentrates had all been shipped, and before any one even in the office had any idea of what the wages earned would be. At the same time a committee from the Union ordered from the mine, and from the boarding and lodging houses there, the few remaining non-union men. Of course the mine closed down. The men were paid off as fast as possible, and given three-quarters of the regular wages according to agreement. Arrangements were made with local banks to furnish funds to meet the emergency.

The company had, on starting up, timbered the mine where necessary, and put all buildings, tracks, tramway, shops, railroad and mill in good order and had furnished all tools. When the shutdown came, the company was also compelled, for safety and economy, to timber up where the co-operatives had taken out the ore, and to gather up tools and care for machinery at its own expense. All expenses considered, the mineowners will make little or nothing from the 8,800 tons of ore used in this experiment. But they did not make a heavy loss, as they would have done at flat wages.

On settling the November accounts the men were found to have made less than the promised three-quarters, and hence their time checks were worthless. Yet 90% of the men would have returned to work at the old rates if it had been possible.

The financial statement for November was posted and published December 20th. The entire account was itemized, but a brief enumeration is as follows: The concentrates produced in November were 635 tons net, and the account stands as below:

Total receipts for November concentrates		$12,657
Less 19% to Morning Mining Company for royalty		2,405
Total co-operative receipts for month		$10,252
Freight, supplies and miscellaneous receipts		39
Total		$10,291
Supplies consumed	$1,382	
Office and general expenses, including assay office	128	
Mill and railroad payroll	1,615	
Sampling 661 tons	397	
Rebate allowed smelters on October	87	
		3,609
Balance for mine workmen		$6,682

There were 2,645½ miners' shifts to be divided, hence one miner's shift received $2.526; one shoveler's shift, $2.10; one blacksmith's shift, $2.947; one shift boss' shift, $3.789.

The miners' shifts referred to in the above statement result from mine

work as follows: 1,360 miners' shifts at rate 1, 1,360; 971½ shifts at rate ⅚, 809½; 162 shifts at rate 1⅛, 189; 107⅔ shifts at rate 1½, 161½; 29 shifts at rate 2, foreman, 58; 30 shifts at rate 2¼, manager, 67½; total, 2,645⅚.

The royalty was reckoned at 19%, but in fact it was only 17%, owing to payment of three-quarters of regular wages as verbally agreed—instead of the figured and lower rate. If all royalty had been divided among workmen the miners' wages would have been only $3.44, or $0.06 per shift less than the union rate. This shows the impossibility of working at union wages with lead at three cents.

Notwithstanding the fact that the mine and mill never ran at full capacity, and men were comparatively new in their respective places, owing to the steady opposition by local miner's unions, union notices posted, calls from and for committees, etc.—which all who have lived in an active miners' union district can appreciate—the ore was worked at about 20 cents per ton cheaper than ever before, even if full $3.50 wages be allowed. This does not speak badly for the work obtained from the men during this brief co-operative experiment.

The actual statement of costs for November is as follows: Mining per ton, $1 536; milling, $0.277; railroad, $0.108, general expense, $0.040; sampling, $0.080; royalty, $0.475; total, $2.516 per ton.

Although this ore was low grade and terms rather hard, yet times were harder, and men were satisfied with them and would have continued at work, but for interference by the union.

To any mine owners or managers who may think of trying this co-operative plan elsewhere, I give the following suggestions from my experience here. I do not think in good times, with good wages, at rich mines, that the average Western miner would take kindly to the plan. But in times of scarcity of work or low prices, I believe some co-operative plan will work successfully:

It will require, above all things, honest, patient, careful bookkeeping. A storehouse account book should be kept for the supplies, and the five columns of "on hand first of month," "received during month," "total," "consumed during month," and "balance on hand last of month," filled out from invoices and bills of supplies purchased. Thus the supplies consumed will be easily recorded and reckoned in the consumed column. Each main column should be divided into two columns, one for number of packages and the other for cost.

If the superintendent is at all "thinskinned," better not try the co-operative plan, for the criticisms and complaints will paralyze him.

In working a mine in the West, whether on co-operative or straight wages, a few days should be allowed each month, after pay-day, for the average mine laborer to get drunk and gamble away his money. It is his "God given right, as a free-born American citizen, to do what he pleases with his own money." He should not be hampered in this respect. I believe he is a far better workman when "broke" than before.

Also, in a strong union district, where one-half or three-fourths of a loaf is an insult, I would never recommend co-operative work. Better reserve the ore in the mines than give it away to thankless or cursing workmen.

D. B. HUNTLEY,
Lessee and Manager Morning Mining Company.

MULLAN, Idaho, Dec. 22, 1894.

A Classification of Economical Geological 'Deposits.'

EDITOR ENGINEERING AND MINING JOURNAL:

Sir: I fully appreciate the compliment of Dr. Raymond's extended notice of the above paper; but it appears to me that his third canon or basal principle of a scientific classification is, at least in his application of it, essentially unscientific to a degree that destroys much of the force and value of his criticism. He states this rule as follows: "3. The sharpness of division should be greatest for the greatest groups, and confusion or overlapping of groups is permissible only in the smaller subdivisions. Indeed, at the point where such confusion enters, the classification, strictly speaking, has broken down."

It is upon this rule especially that his objections to my classification are based; and if the validity of the rule can be successfully impeached, the objections fall to the ground. Now it is generally conceded that strictly natural classifications are more fully and highly developed in the biologic than in the geologic sciences, mainly because the genetic principle is there more readily traced, through the indications of embryology and paleontology. We may, therefore, most justly test this rule in the domain of biology. What is the result? The divisions or classes of whatever rank, from the highest to the lowest, are related like the branches of a tree, diverging upward, but converging, confluent and indistinguishable downward. Take, for example, the two great kingdoms of animals and plants. The boundary between them exists only in our classification. Nature does not recognize it; but we pass by insensible steps from the one realm to the other. And so it must be throughout the universe and in every department of natural science; for hard and fast lines of demarcation are absolutely inconsistent with the great underlying principle of evolution. In spite, therefore, of Dr. Raymond's third rule, I feel that I may safely challenge him to cite a single instance of a sharply defined class or a truly isolated type.

The recent literature of the science shows that geologists are recognizing more and more clearly the essential continuity of the aqueous and igneous rocks; and it is not easy to see why Dr. Raymond's objection to my three primary divisions of aqueous, aqueo-igneous, and igneous rocks would not hold as well against two divisions—aqueous and igneous. The simple fact is that when we start from the most typical aqueous rocks and advance as far toward the igneous rocks as the aqueous characters can be clearly recognized, and vice versa, we find that the two limits do not coincide, but there remains between the two great classes a series of rocks which cannot be properly referred to either. To call them igneous or to call them aqueous tends to "confusion" and "involves a sacrifice of clearness." What if the new class is but the boundary between the other two? If the boundary has appreciable breadth it should be separately recognized; and it is precisely along this line that science has advanced and is advancing. Dr. Raymond says, "a distinction derived from continuous and overlapping processes ought not to be chosen as the primary one." But all natural processes are continuous and overlapping, and the only question is as to which is most fundamental. Now it still appears to me that the most important question to be asked concerning any rock is, Was heat or water the chief agent in its formation, or was it formed through the nearly equal co-operation of heat and water?

Dr. Raymond is also unfavorably impressed by the fact that this intermediate class—the aqueo-igneous rocks—is not subdivided. A natural classification is a concise, systematic, and properly co-ordinated statement of our knowledge of the natural relations existing among the objects or types classified, the genetic relation being in geology, as in biology, the most important. Now here is a group of rocks which geologists are only just beginning to recognize; our knowledge of it is still very imperfect and its detailed classification must await further investigation. Meanwhile its economic aspects are not so varied as to make this delay specially detrimental to the interests of the miner. My critic bases his objection to this intermediate class of rocks in part also upon its smallness, saying that "it seems to have been created merely to accommodate pegmatite." Imagine a zoologist objecting to the creation of a separate class for the accommodation of Amphioxus—one of the intermediate types between invertebrates and vertebrates—on the ground that it is so little! Neither in lithology nor mineralogy has that consideration any weight.

In his attempt to explain Posepny's terms idiogenous and xenogenous, Dr. Raymond intimates that xenogenous and secondary are not convertible terms; and yet he represents Posepny as holding that the first inquiry concerning any rock is: Were the minerals which now occur in it constituents of this rock when formed (idiogenous), or have they been introduced since (xenogenous)? If that is not the distinction between original and secondary constituents it is certainly a close approximation to it. He says further, this question "seems to me to lie appropriately at the door of genetic inquiry and clearly back of the point where Professor Crosby begins." Also, "the question concerning a given mineral deposit, whether it is a part of the rock containing it, produced at the same time and by the same agencies as produced that rock, is unquestionably prior to the question what those agencies were."

Now one only needs to refer to Posepny's paper to learn that the deposits which he calls xenogenites are chiefly or almost exclusively aqueous deposits of subterranean origin, including veins, impregnations, and substitution deposits. In the nature of the case such deposits cannot be other than secondary, i. e., newer than the inclosing rocks. But I utterly fail to see why a dike is not as truly xenogenous (newer than the inclosing rocks) as a vein. Therefore, it seems to me that, according to Dr Raymond, dikes and veins should, in the primary distinction, be classed together; and the question as to whether they are of aqueous or igneous origin comes afterward. Against this weight of authority I still venture to hold that it is better to make the primary distinction between aqueous and igneous; and I can see no advantage in calling the aqueous deposits of subterranean origin xenogenites, since the relation implied by that term is not peculiar to them.

Concerning sublimates formed in fissures, it may be noted that if material comes up from below in a state of fusion and hardens in fissures, it is, according to Posepny and Dr. Raymond, idiogenous; but if it comes up in a state of vapor or in solution and hardens in the fissures, it is xenogenous; and sublimates are thus to be sharply distinguished from other deposits made chiefly by the agency of heat, and associated with deposits made chiefly by the agency of water, although the general relations of the deposits to the earth's crust are almost identical in the several cases. Dr. Raymond quotes my statement that sublimation is a true though not a principal cause of vein formation; but fails to note that, as the classification clearly shows, I was here using the term vein in the broad sense that embraces all vein-like deposits. My definition of veins as deposits formed from solution in actually or potentially pre-existing cavities evidently excludes sublimates. Dr. Raymond would, apparently, so frame his definition of veins as to include subterranean sublimation deposits. But that is clearly making the genetic principle secondary to form, which he elsewhere condemns.

My critic next takes me to task for not recognizing in the classification of the subterranean aqueous deposits "the radical difference between those produced by the 'vadose' circulation and those formed at depths below the underground water level." He has, apparently, overlooked that part of my discussion of veins from which I now quote two sentences:

"The following classification of veins formed in secondary cavities is based upon the modes of origin, and only incidentally upon the forms of the cavities or fissures; but it is clearly recognized, as already pointed out, that with increasing knowledge of the chemistry of vein formation, the mode of filling will take precedence as a basis for the classification, the present arrangement being regarded as provisional. Not only the character of the mineral solutions, whether descending, lateral (lateral secretion veins), or ascending, should be considered in the true classification of veins." Descending solutions is certainly a fair, if not an exact, equivalent for "vadose" circulation; and I fail to see how my language could have been much more explicit.

Dr. Raymond also condemns the distribution of metasomatic or replacement deposits under the two general heads of impregnations and substitution deposits, stating that "the classification goes all to pieces in dealing with this grade of subdivision. Instead of a genetic principle, which metasomatosis would clearly furnish, it follows no principle at all: makes no group comprising all metasomatic deposits, but, putting five metasomatic deposits in one group, erects another group to contain two additional ones, the sole distinction of which is that they are like the others, only more so!"

I foresaw this objection and fully appreciate its force; but I am satisfied that to follow the purely chemical principle of metasomatosis so closely as Dr. Raymond proposes, regardless of the time, place, circumstance and degree of its application, would be a serious error; for we should thus virtually lose sight of the fact that the classification of geological deposits is a geological problem, and geology, we all admit, is a many-sided science. The purely chemical classification is quite certain to associate deposits that are not, geologically, closely related and, as I have endeavored to show in the introduction to my paper, some of the gravest defects of previous classifications have arisen in just this way. Thus, a bed of gypsum and a vein of tin ore are, according to these classifications, more nearly related, since both are chemical deposits, than a bed of gypsum and a bed of slate. This may be true from the standpoint of the chemist, but it is certainly not good geology. The difficulty pre-

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* "A Classification of Economic Geological Deposits, Based on Origin and Original Structure." By W. O. Crosby, Mass. Inst. of Technology. "Tech. Quarterly," April, 1894; and "American Geologist," April, 1894.

† By R. W. Raymond, Ph. D., "Eng. and Mining Journal," Nov. 3, 1894.

sented by Dr. Raymond's proposed grouping of the metasomatic deposits is similar to this example, though less extreme.

Taking a general view of subterranean aqueous deposits, we find that they have been formed in cavities (veins), or in the body of some rock (impregnations), or they have completely replaced a mass of rock (substitution deposits). Now impregnations must be either pore filling or metasomatic; and if we follow Dr. Raymond in associating the metasomatic replacements of every degree with the complete replacements or substitution deposits in one compact group, why should we not, by parity of reasoning, group the pore-filling impregnations with the other deposits formed in cavities (veins)? Impregnations would thus be entirely eliminated and the classification simplified. But would it be improved? Not certainly as regards its real utility. Other things being equal, the preference may properly be given to that scheme which has the additional merit of feasibility. In his introductory paragraphs, Dr. Raymond insists, rightly, that the primary distinctions should be more strongly marked than the secondary and tertiary distinctions; but here he clearly departs from that rule. Impregnations are, in general, readily distinguished from substitution deposits; but how numerous are the cases where we can determine with difficulty, if at all, whether or not the impregnations are metasomatic? In fact, it remains to be proved whether or not they are ever entirely non-metasomatic; for it is certainly conceivable that in every instance there is some sort or degree of reaction between the rock and the impregnating solution.

Dr. Raymond says that my classification of veins is based, properly enough, on form, and then objects to the type of crenitic veins because it differs in form only from other types, saying, "Where the channel was a fissure we have a fissure vein; where it was simply a hole, the same vein is crenitic."

With regard to this combination of two types in one vein, it may be noted that just as a crenitic vein must usually pass downward into a fissure vein, so do fissure veins often give off branches which are best classed as gash veins, or interbedded veins; and it is commonly a very difficult matter to draw the line between the vein proper and the accompanying substitution deposits or replacements of the walls. Therefore, in the closing paragraph of my paper I have stated "that it is not a valid argument against this or any classification that our ideal types are far simpler in most cases than the actual deposits; for a classification, to have any value, must isolate causes and exhibit phenomena in their elements. Thus we cannot ordinarily say of a deposit that it belongs to this or that type, but to this or that combination of types."

At a great depth in the earth, where the rocks are rigid enough to maintain open fissures, fissure veins and dikes are formed; while nearer the surface, where the rocks are shattered and yielding and the volcanic and crenitic phenomena are more localized by the closing of the fissures, crenitic veins and volcanic necks or plugs are formed. I fail to see why the differentiation is not as justifiable in the one case as in the other. It is certainly analogous to the distinction of the "vadose" and the deep circulation. Nor do I discover in the descriptions by Kedzie and Schwarz which Dr. Raymond cites anything inconsistent with the view that the "chimneys" of the Yankee Girl and other mines on Red Mountain, Colorado, are, as Kemp and Comstock have explicitly stated them to be, ancient hot springs. Emmons has explained these "chimneys" in accordance with his general view that subterranean aqueous ore deposits are chiefly metasomatic impregnations or substitution deposits, a doctrine which I am disposed to indorse, although it is not a prominent feature of my paper, for the simple reason that a classification cannot properly take account of quantitative considerations. But, although the Red Mountain "chimneys" are undoubtedly in part replacements, like most veins, Emmons agrees with all the other writers that they are on a general line of fracture and that each one is bounded in part by slickensided fracture planes. These characters have been proved by mining for a depth of 1,000 ft. or more. An original opening for the ascent of the water appears, therefore, to be a necessity of the case, and it is not easy to see wherein the characters of crenitic veins are wanting in these Red Mountain deposits.

Dr. Raymond not only throws out my illustrative examples, but refer veins formed in the conduits of springs to the class of cavern veins, holding that the conduits or pipelike channels are usually spaces of dissolution. This dictum may be accepted for springs issuing from calcareous rocks; but geology teaches us that thermal springs in general reach the surface either through volcanic necks, thus contributing to the formation of neck veins, or along lines of faulting, such springs being one of the recognized surface indications of faults. Now what reason have we for supposing that the channels of the thermal waters are in any greater degree spaces of dissolution in their constricted or chimney like upper portions where the crenitic veins are forming, than in the fissure-like lower portions where fissure veins are forming? Certainly we all believe that the solvent power of the water diminishes as it approaches the surface; and Dr. Raymond doubtless holds with Posepny and many others, in opposition to Sandberger's view, that mineral deposition does occur in the conduits of springs.

The existence of crenitic veins is a necessary deduction from well-established geological principles; the examples cited are not disqualified by the recorded facts; but even if they were, the existence of economically important examples is, a priori, extremely probable. It appears, therefore, to be simply a taxonomic question. Is it worth while to recognize this type in the classification? It appears to me that in answering in the affirmative I have but followed well-established geological analogies.

Dr. Raymond raises the question as to whether "the science of ore deposits in particular gains anything" by broadening the classification so as to embrace all economic deposits and, virtually, all geology. This remark well illustrates the fallacy of studying ore deposits out of their relations to the whole of which they are but a small part, and a variable part at that. Is there a science of ore deposits? Not if we may define a science as a systematized body of knowledge having fixed and natural boundaries. If the boundaries are arbitrary and shifting, as they must be when based upon economic definitions, it is not a science, perhaps not even a fragment of a science, but a body of unorganized and unco-ordinated facts. It appears to me, therefore, that our knowledge of ore deposits will be advanced and elevated, or made more scientific, by taking more account of their relations to general geology.

W. O. CROSBY.

BOSTON, Mass., Dec. 11, 1894.

MINING AT BENDIGO, AUSTRALIA.

Written for the Engineering and Mining Journal by T. A. Rickard.

The colony of Victoria contains two towns whose long-continued prosperity render them distinguished in the pages of the record that tells the chequered fortunes of gold mining. Ballarat and Bendigo, from the days of their first discovery in 1851 until the present time, have been uninterruptedly large producers of the yellow metal.

In the extent of its development and in the magnitude of its production, Bendigo is the greatest gold field of which there is record. There are in this one district no less than 28 shafts, the vertical depth of each of which exceeds 2,000 ft. Several of them approach 3,000 ft.; one, Mr. George Lansell's "180" mine, is now sinking below 3,100 ft. It is possible to walk underground at a depth of nearly half-a-mile for a longitudinal distance of 2½ miles along the strike of one of the lodes—the New Chum reef. Bendigo has added 15,870,747 oz. to the world's store of the precious metal. The money value of this output is no less than $317,414,000, a total which will bear comparison with the combined gold and silver production of the Comstock itself.

This mining district has a unique geological structure.* The country rock consists of a series, enormously thick, of alternating thin beds of slate and sandstone. These beds have been bent and folded, producing a wavelike succession of corrugations. Bodies of gold-bearing quartz have been formed along the bedding, the ore being more particularly found at the top of the waves or anticlinal folds. The thickest body of ore occurs at the apex of the anticline—the crest of the wave, the quartz thinning out on either slope. The miners have—very appropriately—called these ore deposits "saddles." The Bendigo "saddle-reef" has become a term familiar to every Australian.

These saddles succeed one another in nearly vertical succession along a line which is the axis of the fold along which they have been formed. In strike they extend for many hundreds of feet, and either die out or are overlapped by a new foundation of quartz, much as, to employ our former simile, the crest of one wave merges into that of another. There are several such formations at Bendigo. Each series of saddles corresponds to a fold in the country, and is known as a "line of reef," this term as applied by the miner to the occurrence of gold-bearing quartz corresponding to the anticlinal axis as applied by the geologist to the inclosing country rock.

The three most productive lines of reef or lode channels have been the New Chum, Garden Gully and Hustler's. They are known as the "main lines" and are not successive folds, but are separated by others, the "side lines," whose lesser importance is due to their having been gauged, not from a geological, but from an economic point of view, that is to say, they have been less extensively developed and have yielded less gold than the three main lines.

The New Chum has undergone the most vigorous exploration; upon it there have been sunk more than 20 shafts exceeding 2,000 ft. in depth. It has yielded the largest total amount of gold and until very recently has been regularly the most important producer in the district. At the present time the Johnson's Reef, which is the northern continuation of the Garden Gully line, is the most productive. The two leading dividend-paying mines for 1893 were on this line of reef, namely, the Johnson's Reef Company, which paid £4,900 in dividends from the treatment of 34,733 tons, which yielded 23,214 oz.; and the Princess Dagmar Company, which paid £46,007 from the treatment of 11,407 tons, which gave 15,783 oz. gold. The third largest producer last year was the New Red, White & Blue Consolidated, a mine located on a side line, the Sheepshead Reef, which lies between the Garden Gully and the New Chum.

The territory possessed by the different mining companies is unusually small. Thus, for instance, 10 contiguous properties working on the New Chum line have an average territory of a little over 11 acres, the smallest being 2 acres, and the largest 22 acres. The average depth attained by these 11 mines is now no less than 2,500 ft.

The small area controlled by each company has been one cause and the vertical succession of the ore bodies has been another in promoting the downward development of the mines. The discovery of large masses of valuable gold ore has assisted this tendency and has rendered the deep sinking craze fashionable.

At the present moment a halt has been called and an interesting discussion is being waged at Bendigo as to the advisability of extensive crosscutting between the main lines of reef—in other words, of lateral exploration as against vertical development.

That the policy of an indefinite downward extension of the mine workings should be questioned is significant of the fact that during the past two years the deep mines have not given results at all commensurate with the vigorous development which has been carried on. When the writer was at Bendigo—at intervals during 1889, '90 and '91—the chief producer of the region was the New Chum Railway, situated at the southern end of the series of deep mines on the New Chum Reef. This mine, at a depth of 2,025 ft., was exploiting the deepest known of the series of saddle formations discovered up to that time. The same formation was being very successfully worked in the adjoining groups of mines, such as the Shenandoah, Garibaldi, New Chum Consolidated, Lazarus and North Old Chum, and other properties, at depths varying from 1,800 to 2,300 ft., according to the pitch of the reef. In 1892 the New Chum Railway returns fell off seriously, but the New Chum United developed the same formation, and from it obtained yields which made this property the greatest producing mine of that year. In the same year (1892), however, several of the mines above mentioned had begun to show impoverishment. In 1893 the returns from the New Chum Railway, New Chum Consolidated, New Chum United and other mines working this saddle formation underwent a further decrease, so that many of them were transferred from the dividend to the call list.

In the interval, however, a saddle formation even deeper than that first worked successfully in the New Chum Railway in 1890 had been found at a depth of 2,200 ft. in the Garibaldi mine in 1892. The great mines of the New Chum line at once got ready for sinking, and pushed down their

* Which is more fully described in the writer's contributions to the "Transactions" of the American Institute of Mining Engineers, Vols. XX. and XXI.

shafts to intercept this which was now the deepest known saddle reef. Their search has met with a marked want of success, for, while the quartz formation has been found, it has not yielded any such returns as it gave in the Garibaldi mine, and as a consequence the names of the deepest mines on the New Chum all appear as having levied calls on their shareholders. Even the Garibaldi this year has so far been an unprofitable mine. These unsatisfactory results have been due to no lack of enterprise on the part of the mine owners; on the contrary, the search for pay ore has been both vigorous and extensive.

Meanwhile the Johnson's Reef Company and the Princess Dagmar Company on the Garden Gully line, working at depths of 1,500 to 1,700 ft., have continued to be the two leading gold producers, thus dimming the former glory of the New Chum line. Again, in 1890, Mr. Lansell caused the opening of the new Red, White & Blue Consolidated, which has been already referred to as being on one of the side lines. This mine in 1892 and 1893, working at 760 and 860 ft., was among the richest mines of Bendigo. This year it has exhibited a marked falling off, but adjacent claims on the same reef and at shallow levels have contributed satisfactorily.

The above short resume of the progress of mining at Bendigo will help to make clear the reasons for the desire expressed by the most experienced local mining men that the central part of the gold region be explored by a series of well-planned crosscuts.

The mining industry of Australia is carried on under a government supervision which is both vigilant and practical. The results are in many ways very beneficial, but together with government control comes paternalism. The prospecting grant of £80,000, doled out to diggers and mining companies by the Victoria Mining Department, did little good and much harm. It weakened the independent dauntless energy of the mining community and strengthened for a time, that tendency toward socialism which was manifested in the demand for the carrying out by the State of public works of various descriptions. The prospecting grant has been discontinued, but government assistance in large mining operations is not yet unknown. When, therefore, the local newspaper—the Bendigo "Advertiser"—brought forward the suggestion for the development of the district by long crosscuts put out from existing deep shafts in order to explore the country lying between the main lines of reef, one of the very first things done was to call a public meeting to forward a memorial to the Minister for Mines requesting a grant of money to cover the expenditure which would be incurred in carrying out the proposed scheme. The Ballarat mineowners, on the other hand, naturally object to public money being expended in operations which they consider local, but which the Bendigo men claim to be of national importance. The Ballarat "Courier" points out good humouredly that the cabinet contains three Bendigo men, and that therefore the district has a "pull" on the treasurer. The incident is an amusing commentary on the system of government control of mining.

In the public discussion of the matter some difference of opinion has been developed among the mine managers as to the best method of carrying out the scheme. Some advocate the utilization of existing deep shafts with their plants of machinery for the purpose of driving crosscuts from one line of reef to the next main line through the side lines which intervene. Others object to this plan, because they consider large bodies of water might be struck, such as would flood the existing mines. A third group would wish the proposed exploration carried out without any crosscutting, but by the direct sinking of shafts upon the side lines themselves. The assistant government geologist, Mr. Stirling, favors the extension of crosscuts at a deep horizon because they would uncover the geological structure of the region, and, would prove of both great scientific and economic value. It is now nearly four years since the writer strongly recommended the driving of crosscuts through the country separating the rich main lines of reef.* The experience of many goldmining districts will show that where parallel lode channels occur rich bodies of ore are often found opposite one another. It is a fact that at Bendigo the richest portions of the district occur along the same transverse line. The Great Extended Hustlers, Garden Gullsy United and '180' mines—three of the richest properties on their respective lines of reef—are so related. At Bendigo, as has been pointed out by several geologists, the folding causes the same beds to be the incasing country of the saddles of the different lines of reef along a certain belt. The influence of the inclosing rock upon vein formation in general is now well recognized, and there are, therefore, many reasons why, from the point of view of the economic geologist, the driving of such crosscuts is to be strongly recommended.

It is to be hoped, therefore, that whether with or without government assistance, and preferably without it, this far-reaching scheme of exploratory work will be put into execution. In the mean time those who wish good luck to old Bendigo will not be daunted by the recent want of success in deep mining; there are other directions besides a vertical one, there is ample room in the district for the finding of new mines. That central part of the region which has yielded nearly 16,000,000 oz. of gold is only a very small part of the mining area. The extension of the known reefs to the north and south, the side lines as yet scarcely touched, all invite the judicious investment of money in well planned schemes of development.

While, however, the Bendigonian delves below for fresh ore bodies, he might incidentally pay more heed to the proper handling of that ore when it is hoisted to daylight. Last year a new mill of 105 stamps was erected by Mr. Lansell on the New Red, White & Blue Consolidated mine. It is a matter much to be regretted that the leading mineowner of the district, a man whose enterprise restored the prosperity of Bendigo in its darkest hour, should have erected a new mill wherein the primitive barbarism of the sledge hammer and hand-feeding are still retained. That the stamp mills of this district should all of them still be so behind the times in the matter of the automatic and economical treatment of their ore is due to a perverse disregard of experience which is in strong contrast to that quick adaptation of improvements which characterizes the great mining camps of western America. If the mining men of Bendigo will put some of the good sense and excellent judgment shown by their underground operations into their surface work, then Bendigo will long be maintained in its position of "the greatest reefing center of the Southern hemisphere."

* "New Chum" is the colonial equivalent of "tenderfoot."
* See page 513, Vol. XX., "Transactions" of the American Institute of Mining Engineers.

MINERAL PRODUCTION OF NEW ZEALAND IN 1893.

The annual statement of the Mines Department of New Zealand, which has been issued, records steady progress in both gold and coal mining. The quantity of gold and silver produced for the year ended December 31st, 1893, was 289,887 oz., of the value of £922,881, while 700,603 tons of other minerals (including 8,317 tons of kauri gum), of the total value of £899,793, were also produced for the same period, as against 260,132 oz. of gold and silver, of the value £958,740, and 687,295 tons of other minerals (including kauri gum), of a value of £907,566, produced for the previous year. The details of the quantities and values of the different materials exported are as follows: Gold, 226,811 oz., value £913,138; silver, 63,076 oz., value, £9,743; antimony ore, 331 tons, value £3,467; manganese ore, 319 tons, value £943; mixed minerals, 37 tons, value £650; coal, 69,136 tons, value £72,699; coke, 51 tons, value £53; kauri gum, 8,317 tons, value £510,775; while the coal produced and consumed in the colony amounted to 622,412 tons, valued at £311,206; making a total value of all minerals of £1,822,674. The value of gold and silver produced up to the end of 1893 was £49,454,886, and the values of other minerals and metalliferous ores, including kauri gum, are as follows: Copper, £17,866; chrome, £37,367; antimony, £49,507; manganese, £56,107; hæmatite, £226; mixed minerals, £70,322; kauri gum, £6,860,196; coal exported, £659,882; coke exported, £23,643. The value of coal raised and consumed in the colony was £3,842,408; making a total value of £61,072,410. The quantity of foreign coal imported for the year ending December 31st, 1893, was 117,444 tons, of the value of £111,956; of this 6,026 tons, of the value of £6,460, was, however, again sent out of the colony.

The yield of gold for the year ending March 31st, 1894, shows an increase over the previous year of 12,043 oz, representing a value of £52,753. The total yield of 1893, according to the Customs returns of the quantity entered for exportation, not including the gold manufactured into jewelry, etc., in the colony, was 247,702 oz., representing a value of £970,220, while the yield for the former year amounted to 228,659 oz., having a value of £917,467. The increased yield in 1893 came from the Auckland and Otago districts, being 11,374 oz. and 4,781 oz. respectively; while the Marlborough district showed a decrease in the yield over the former year of 793 oz., Nelson 613 oz., and the West Coast 2,706 oz, making the total increase in the North Island and Otago 16,155 oz., and the total decrease in the other districts 4,112 oz. Of the gold produced in 1893 the Auckland district contributed 52,426 oz., or 21·78% of the total yield; Marlborough and Nelson, 4,441 oz., or 1·84%; the West Coast, 98,930 oz., or 41·10%; Otago, 84,905 oz., or 35·28%. The yield of gold from Coromandel, including Kuaotunu, was 10,019 oz., from 10,242 tons of quartz and 2,388 tons of tailings, showing a decrease of 2,935 oz. for 1893. Recently gold-bearing ore has been obtained in the deep levels of the Kapanga mine, and rich ore was also discovered in the Coromandel Company's property. The total yield of gold from the Kuaotunu field in 1893 was 8,044 oz. This came from 9,660 tons of quartz and 2,240 tons of tailings. At the Thames during the year there were 34,637 tons of quartz and 14,970 tons of mullock crushed, also 13,220 tons of tailings treated, yielding 34,637 oz. of gold, representing an estimated value of £92,650: 650 men were employed. The principal gold-producing mines have been the Moanatairi, 4,586 oz.; New Alburnia, 5,992 oz.; Hazelbank, 2,669 oz.; Waiotahi, 2,719 oz.; May Queen, 4,369 oz; and the Cambria, 1,470 oz. The total yield was 1,038 oz. more than the previous year.

Referring to deep levels prospecting, the report states that a combination of the whole of the companies interested in the deep levels is required before any extensive prospecting operations in this direction can be proceeded with. The holdings below the 500-ft. level are at present utterly useless, but nevertheless the value placed on the ground in many instances is such that it would be a difficult matter to find outside capital to come to the assistance of the companies. Before any practical results will ensue, the present holders of mining property at the Thames will have to modify their views in regard to the value of their claims, or else offer sufficient inducements for capitalists to assist them, otherwise mining in the district is bound to dwindle down, and in time many of the properties will be forced into liquidation. Every year the pay ore in the upper levels is gradually getting less, and the time will come when, unless money is forthcoming to test the lodes at deeper levels, the mines will have to be abandoned.

During 1893 the output from all the coal mines in the colony was 691,548 tons, as against 673,315 for the year previous, showing an increase of 18,233 tons. The total quantity imported was 117,444 tons. This makes the total quantity raised and imported 808,992 tons; but of this, 24,288 tons were exported to other countries, and 50,838 tons were used in coaling direct steamers for Europe. The total consumption of coal in the colony, therefore, was 784,704 tons in 1893, as against 770,599 tons for the previous year. This shows the increased consumption to be 14,105 tons. About 8,000 tons less than the previous year were imported in 1893. Notwithstanding that bituminous coal is the class to be looked to for an increased output, the year shows a decrease in the quantity raised of 25,927 tons, while there was an increased output of 41,526 tons of pitch coal, and 6,694 tons of brown coal.

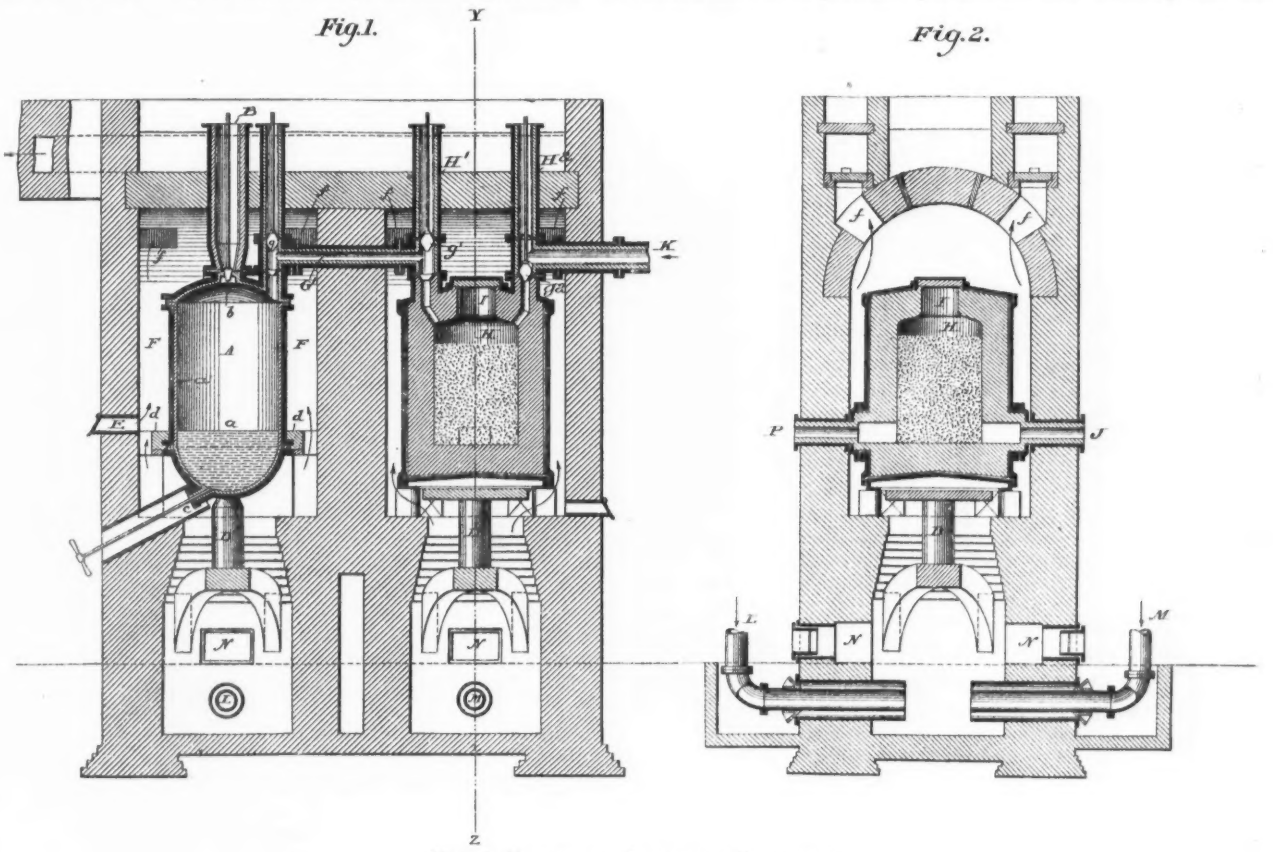
There are large quantities of manganese in the colony, but its low value will not admit of costly transportation to a port of shipment; and it is only when the ore can be got near the ocean beach, where the vessels can come to load, that it can be made remunerative for working. Hitherto mining for this ore has been confined principally to the Auckland district—at Whangarei, Bay of Islands and Waiheke Island. There is some very rich ore in the Otago district, near the mouth of the Taieri River, but it has not been found in sufficient quantity to work remuneratively. In 1893, 319 tons were exported, representing a value of £943.

Countries in the Postal Union.—Advice has been received that Cape Colony has joined the Postal Union. The union now includes every civilized country with the exception of the Orange Free States and several small islands in the Orient and Africa.

MOND'S NEW PROCESS OF OBTAINING CHLORINE.

The accompanying illustrations show the form of still or retort adopted by Mr. Ludwig Mond in a new process for obtaining chlorine recently devised by him, and patented in England and the United States. Fig. 1 is a vertical section of the apparatus, and Fig. 2 is a section on the line Y Z in Fig. 1. In this process ammonium chloride is vaporized in a still or retort, A, made of or lined with antimony and heated on the outside, which is set into a suitable furnace, F, in such a way that only the lower part of the still is exposed to the full heat of the furnace. This still is filled with zinc chloride to such an extent that when the chloride is melted it fills the still a little higher than the portion exposed to the full heat of the furnace. The ammonium chloride is introduced through a suitable hopper or feeder, B, into this still in small quantities or continuously, and allowed to drop on the molten zinc chloride, thus obtaining a very rapid vaporization. Those parts of the still which are not exposed to the full heat of the furnace must be kept at a temperature above 350° Cent., so that the volatilized ammonium chloride is not condensed again. In order to make a strong and durable apparatus and to save antimony, it is best to make the still of cast iron, and to line it on the inside with antimony or an alloy of antimony, in which this metal so largely predominates that it will resist the corrosive action of the substance named. The vapor of ammonium chloride produced in this still, is taken through conduits, by preference constructed of cast iron lined with antimony or with earthenware tiles, and which are also kept heated above 350° Cent., into vertical cylinders which contain the oxide or salt to be acted upon. Of the numerous substances that can be used for the process a mixture of magnesia with a certain quantity of chloride of potassium is preferable. It

Fig. 1. *Fig. 2.*



MOND'S PROCESS OF OBTAINING CHLORINE.

has been found convenient to add to these substances a certain quantity of china clay and also a little lime or chloride of calcium. The magnesia used should not be too dense. The product obtained by precipitation with milk of lime from natural brine or sea water or other salt containing chloride of magnesium, subsequent settling and washing, preferably by means of filter presses, and then exposing to a moderate heat to expel the water of hydration is found very suitable for that purpose. Good results have been obtained by adding to every 100 parts of magnesia 75 parts of china clay and 6 parts of quicklime. These substances are mixed thoroughly and then ground in a suitable mill, with the addition of a solution of chloride of potassium of 17° to 20° Twaddle, in sufficient quantity to obtain a thick paste. Of this paste small round balls or pills of about ½ in. diameter are made by means of suitable machinery. These pills are dried carefully and then heated to a low red heat. For the drying it is best to use a traveling band passing through a heated chamber, and for the subsequent heating a vertical iron retort working continuously. In this way very hard pills are obtained, which will stand the repeated chloridizing and oxidizing for a long time. These pills are filled into these cylinders named above to a convenient height, say 6 to 8 ft., and rest on a false bottom or on a layer of broken bricks, or of pills of the same material, but of larger size. The apparatus used for this purpose is patented in United States patent No. 491,741. Previous to introducing any ammonium chloride vapor into the cylinders a current of hot inert gas is passed through them, so as to raise the temperature of the pills inside the cylinders to about 350° Cent. When this temperature has been reached the hot gas is shut off and chloride of ammonium vapor passed in, in such quantity and at such speed as the quantity of pills will allow. The ammonia formed is taken from the bottom of the cylinder to a convenient absorbing apparatus. When sufficient ammonium chloride has been passed through, the valves or plugs admitting it are shut off and a current of inert gas previously heated to a temperature of 500° to 550° Cent. is passed through the cylinders. For a certain time this gas, on leaving the bottom of the cylinders carries with it a certain quantity of ammonia, and is passed through a suitable washing apparatus for absorbing this ammonia. When the flow of ammonia ceases the gas carries with it a certain quantity of hydrochloric acid. As soon as this appears the gas is turned through a different set of conduits into a suitable apparatus for absorbing this hydrochloric acid. When all the hydrochloric acid is driven out of the cylinders the pills have generally arrived at a temperature of 500° to 550° Cent. If not, the current of hot inert gas is continued until this temperature is reached. The inert gas used for this purpose must be as far as possible free from oxygen and vapor of water, in order that it shall not itself act upon the chloride of magnesium in the pills. The gases obtained from a well conducted lime-kiln and the gases escaping from absorbing columns used in the ammonia-soda process are, if the necessary precautions are taken to keep these gases as free as possible from oxygen, quite suitable for this purpose, more particularly after carefully drying them by means of strong sulphuric acid. When the pills have arrived at the temperature above named (500° to 550° Cent.) the current of inert gas is stopped and a current of hot air introduced. The air is previously carefully dried by contact with strong sulphuric acid and then heated to a temperature of 800° to 1,000° Cent., by preference by means of a Cowper stove. Air at this temperature decomposes the chloride of magnesia very readily and quickly, and on leaving the bottom of the cylinders it contains from 7 to 10% of chlorine, which is practically free from hydrochloric acid, if the previous operation has been carefully conducted, and can, after cooling in cast-iron pipes, be directly introduced into suitable apparatus such as a Deacon bleaching powder chamber for the absorption of dilute chlorine gas by lime.

Toward the end of the operation the gas becomes weak in chlorine. This gas is then passed through a Cowper stove or other suitable heating apparatus to heat it up again to 800° or 1,000° Cent., and take it through another cylinder ready for the production of chlorine. In this way the chlorine gas which goes to the bleaching powder chamber is kept at a reasonable strength. When the chlorine has been driven out as far as is desirable, cold air is passed through the cylinders in order to reduce the temperature of the pills again to about 400° Cent. This cold air gets heated in its passage through the hot pills, and is also passed from the cylinders to a Cowper stove or other heating apparatus to be heated up further and then to be used for liberating chlorine in another cylinder.

In place of cold air cold inert gases may be used, and these may be employed subsequently for heating up the pills in another cylinder. When the temperature of the pills has been sufficiently reduced, the cold air or inert gas is shut off, the ammonium chloride vapor again admitted, and the cycle of operations repeated.

In the engravings A is the retort or still, and G a passage leading from the top of the retort and connected by a branch G' with the converter. In this passage G is located a vertically movable double cone valve g which has seats both above and below the branch passage. E is an air inlet for reducing temperature. H is the converter, also located in a heating chamber, and sustained therein by a central support D'. The converter, like the retort, is heated by producer gas supplied through a pipe M. From the top of the converter rise two pipes H' H², the first of these being connected with the branch pipe G' before referred to, and the second with a pipe K for the introduction of air or inert gas as required.

The pipes H' H² are also provided with valves g' g², similar to the valve g, and with seats for said valves both above and below the connecting pipes G', K. By the manipulation of valve g the retort may be closed or the vapors generated allowed to pass toward the converting chamber. The valve g' in its upper position as shown in the drawing directs the vapors from the retort into the converting chamber H while in its lower position it directs them past the converter through the upper portion of the pipe H'. The valve g² acts in like manner to direct into or past the converter the air or inert gases entering through the pipe K. The converter H is provided at the bottom with oppositely opening outlets J, P, one for the escape of chlorine gases and the other for ammonical gases. N, N, designates manholes, and f, f, flues for the passage of the heating gases.

THE LATE LORD SWANSEA.

Lord Swansea—or Mr. Hussey Vivian, as he was better known—the head of the great Vivian smelting works in Wales, who died recently at the age of 73 years, was of the third generation of a family well-known in the metallurgical world. Born in 1821, he was educated at Eton and at Cambridge University in England, and afterward passed several years in study in France and Germany. His lifework was the management and development of the works which he inherited, and in this he was remarkably successful. He found time also for public affairs, and sat in Parliament from 1852 to 1885 as Liberal member for Glamorganshire and Swansea. He was made a baronet in 1884 and a peer in 1885. His business he understood thoroughly. A number of years ago he delivered a lecture on the subject of copper smelting, which was reproduced in this country by the Scientific Publishing Company in pamphlet form. This work was the best book on the metallurgy of copper which had been written up to that time.

THE LATE LORD SWANSEA.

A writer in the London "Engineer" gives so excellent and appreciative a tribute to his memory that we give an abstract below:

The late Lord Swansea was distinctly a conspicuous figure in the panorama of names and faces which has passed over a stage that represents three-quarters of the life of the closing century. Bessemer and Siemens were, in a sense, his contemporaries; Tyndal and Huxley were his social friends, and sometimes his friendly critics. Lord Swansea had not the gift, perhaps not the opportunity, of discovery as in the one case: and he lacked the talent of literary expression with which Huxley and Tyndal have been enabled to make science seductive. Every one would rather give him praise for his quickness of appreciation of the new ideas as they came to him, and the really splendid enterprise he showed in putting every suggestion offered him to the trial, and sometimes a costly trial, of practical experiment. The spirit of enterprise and the love of experiment would seem in his case to have been faculties or inclinations of hereditary transmission. His grandfather was Mr. John Vivian, who was deputy warden of the Stannaries, and who founded a Cornish metal company 10 years over a century ago. His father was John Henry Vivian, who developed the original Copper Works at Penclawdd, and was in after years—that means an early decade of our century—the creator of the great copper and spelter works at Havod, by which the name of the Vivians, under Hussey Vivian's intelligent and vigorous management, has been made known in the chief ports of the world. "There has never been a serious strike in our works in my lifetime," said Lord Swansea to the writer, and this was at a time when the persons employed at the furnaces and in colleries must have numbered 4,000. "How was that?" it was asked. "Because I know every workman, and every workman knows that if it came to the push I could handle his tools. There's the root of common sympathy; convince them that you can do their work, and can feel for their occasional hardships, and they are as nice a set of men all round as you could wish to meet at your dinner table."

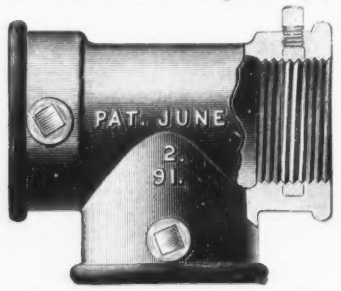
Lord Swansea must be regarded as a great assimilator rather than an originator. He had the keenest appreciation of the value of a new idea, and the conditions under which his early education had been gained will account at once for the comprehensiveness of his knowledge of his trade, and the keen apprehensiveness with which he welcomed—and adapted—other men's newer and more productive thoughts. Thoroughly educated, he was from the beginning a metallurgist and justified the traditions of his house. He became a chemist, because he needed knowledge of the solvents which would dissolve the ingredients of the rocks. But, however he gained his acquaintance with geology—or as he was wont to call it "lithological lore"—he most certainly must be said to have been a geologist so far advanced in his studies as to prove his equality to explorers of more conspicuous names, and to suggest that, if he told all he thought, the older geological school would have called him heterodox. It was his knowledge of chemistry which enabled him, at the Havod works, to capture and condense the sulphurous fumes from the smelting fires. Sir Humphry Davy and Professor Faraday had been in consultation on the same subject in John Henry Vivan's time. It would seem that they tried every device, and succeeded in doing nothing to abate the nuisance. Then came out the Garsteinhoffer furnace. Mr. Hussey Vivain was quick to recognize its merits. The residuals, sulphates, and their cognates, proved to be more grist to the mill, and out of these experiments grew the one-time prosperous chemical works which Lord Swansea added to the rich estate his father left him.

But his geological knowledge became of greater public value at a date within the memory of most of our mining engineers. The great "Coal Scare" we are apt to associate with the names of Jukes, Hall, and Jevons. It will hardly be believed that there are public men who are still saying that our coal supplies will be exhausted in a couple of hundred years or so. Mr. Hussey Vivian, as he then was, knew more about our coal resources than the panic mongers. He moved for the Royal Commission, which in an unscientific way managed to arrive at something like a scientific conclusion. On this question of the coal supply Lord Swansea was always an optimist. There was, he said, at the time of the appointment of the Royal Commission, 24,000,000,000 tons of coal in the South Wales coalfield unworked, but workable below the "imaginary and arbitrary limit" of a depth of 4,000 ft. And the optimism appears in a more pronounced manner when Lord Swansea wrote his notes of a tour through the United States in the year following the first Centennial Exhibition. The coal area, he said, is enormous. It comprises 220,166 square miles, of which only 4,800 are anthracite. There are, besides the true coal measures, 200,000 square miles of lignites, tertiary, and other inferior coals, but valuable fuel of their sort. "When we compare these stupendous areas with those of the United Kingdom, amounting to only 2,920 square miles, and yet consider that our Commission arrived at the conclusion that we have more than 90,000,000,000 of tons yet unwrought, the probable amount of coal in America will appear too vast for the human mind to grasp—as impossible to realize as the distance of the nearest fixed star or the countless hosts of heaven."

A NEW DEVICE FOR MAKING PIPE JOINTS TIGHT.

Within the past two years the Tight Joint Company, of New York City, has introduced an improved class of fittings, which are of interest to users of high pressures. The "tight joint" is similar to an ordinary fitting, except that a groove is cast in the threaded portion of the fitting into which a collar or ring of lead is run. This is formed upon a threaded mandrel of slightly smaller size than the fitting, so that the lead projects a very little beyond the threads. A small hole with a thread cut upon it is made through the exterior of the fitting, into the lead filled recess, and a small set screw inserted. If a pipe be screwed into the fitting, it will expand the leaden packing, causing it to tightly fill the screw threads; and if the joint is not made tight by this means, one or more turns of the compressing screw crowds the lead around the pipe and makes the joint absolutely tight.

The "tight joint" is especially adapted for use in connection with steam, water, air, oil and gas pipes, and especially adapted to vacuum pumps, ice and refrigerating machinery. These fittings have been in practical use and thorough tests have been made of them. That the method is effective has been demonstrated by official tests at the Navy Yard in Brooklyn. The pipe in the fitting having been screwed in by hand, the turn of the set screws was enough to stop a leak purposely produced and the joints remained tight and dry under a pressure of 240 lbs. of steam to the square inch. Under a pressure of 1,100 lbs liquid petroleum, leaks purposely created were similarly stopped. In experiments made at the Stevens Institute of Technology (Hoboken) the joints, once set after a leak had been produced, held 300 lbs. ammonia gas pressure, 300 lbs. steam pressure, 1,700 lbs. air pressure, 3,000 lbs. refined petroleum pressure gradually increased to 12,000 lbs. per square inch. In another case the joints stood without leakage 17,800 lbs. hydraulic pressure, and at the last named figure the metal of the fitting used, and that of the connecting parts, began to pull apart. On the Standard Oil Company's test the following report was made: "A coil of 2 in. pipe was taken, using six 2 in. tight joint return bends, making 12 joints. On first test we found that at 300 lbs. air pressure (under water) there were two small leaks, but by setting up one or two turns on the set screws they became tight. I was somewhat doubtful as to the joints remaining tight where there would be great expansion and contraction, so I raised coil out of water and turned steam through it at 80 lbs. pressure until coil was as hot as steam would make it, then I turned it off, submerged coil in cold water, and again applied 300 lbs. air pressure and found every joint tight."



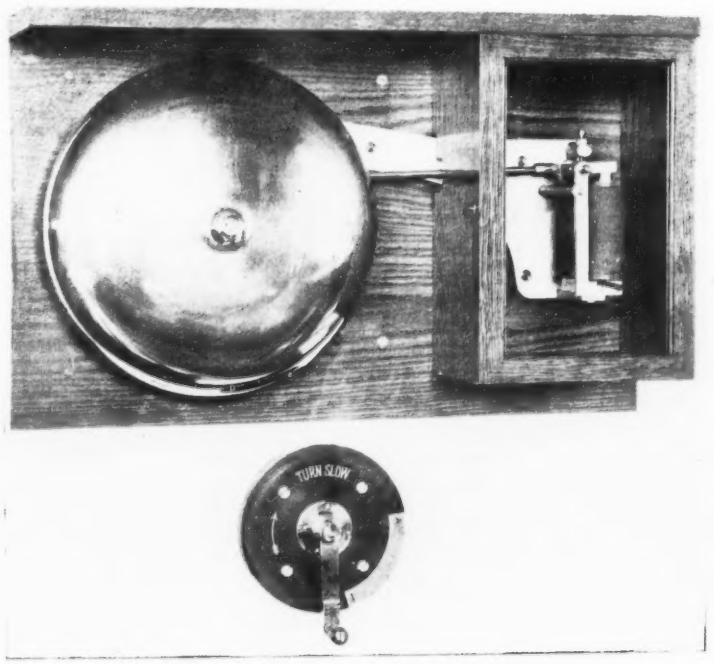
LEAD JOINT APPLIED TO A T.

Tests for Portland Cement.—Mr. Michele's test for Portland cement for 1895 is as follows: Pats ½ in. thick in water, absolutely sound at seven days; tensile strength, 400 lbs. per square inch at seven days; fineness, 5% residue on a 50 sieve. The pats to be gauged on glass, immersed in water immediately, and left there for the whole period. One pat to each three bricks. The test bricks to be gauged by a skilled man, with a mininum quantity of water, and well rammed into molds. The average of three to be taken, which shall represent about 100 tons or less. The strain to be applied as quickly as possible. The sieve to have 2,500 holes per square inch and to be of wire not less than ·007 of an inch—34 B. W. G.—in diameter. Shaking to be continued for five minutes.

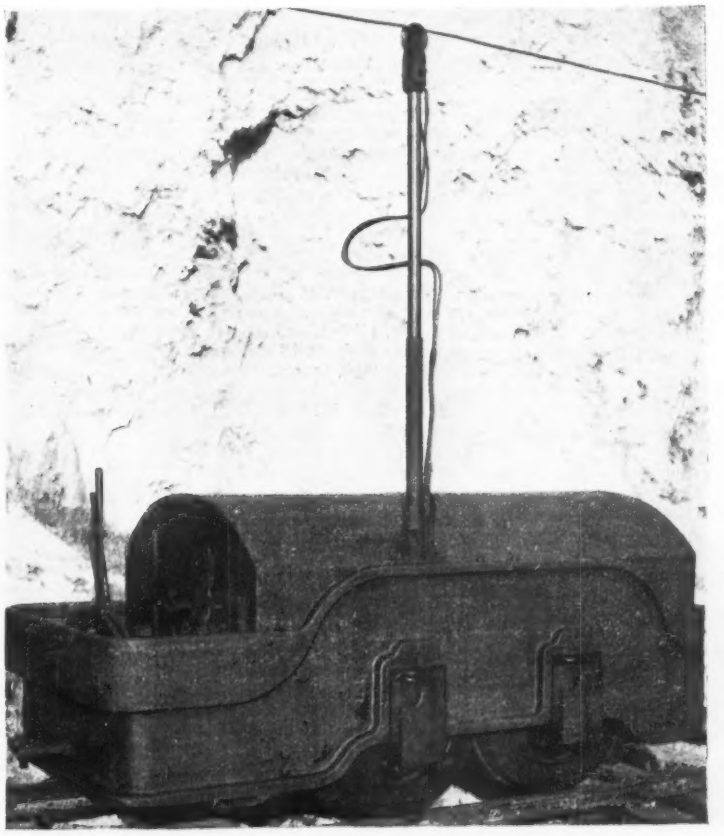
ELECTRIC HAULAGE AND SIGNALING.

Among the leading questions in the economical management of mines is how to get the material to the point of delivery with the quickest dispatch and at the least cost. The mule and horse, although effective in their way, are being superseded by electrical power, since it has been found both more economical and rapid.

The Western Electric Company, of Chicago, has recently entered the mining field, and is now manufacturing an electric locomotive, shown in the accompanying illustration, which has shown excellent results. It is waterproof, has two slow-speed motors connected in parallel, each motor operating an axle by a single reduction with cut gears. Armatures are ring-wound, thus permitting the removal of a coil without tearing the whole armatures to pieces, and do not spark at the brushes under full load. A very short wheel base permits them to run on a curve of 25 ft. radius. The wheels, four in number, have steel tires 4½ in. wide and 2 in. thick, so placed and adjusted that they will accommodate a slight variation of track. In the machine illustrated the weight is such as to guarantee a haulage of 75 gross tons without slipping its wheels on a straight level track. The frame is in one piece, so that no loose joints may occur. Drawbars at both ends are spring cushioned, thus taking the thrust and blow of coupling and preventing it from reaching and injuring the machinery. The switchboard is so arranged that motors cannot be reversed without moving another lever than the starting lever, thus making it impossible for an excited operator to reverse motor by same lever used to give them their motion. Brakes are applied to each of the four wheels and are controlled by a lever at the side of the operator. No screw or gear devices are used on this brake. The journal bearings are of brass and can be removed and replaced at any time. The locomotive moves either way without shifting the trolley, this being overcome by peculiar mechanism of trolley rod. The general dimensions of this size of locomotive are: Length over all, 8 ft. 6 in.; width over all, 4 ft. 6¾ in.; height above rail, 3 ft. 9 in.; weight, 15,600 lbs; wheel base, 28 in.; speed with load in miles per hour, 10; load hauled, 75 gross tons; gauge of track, 36 in.



ELECTRIC SIGNALING APPARATUS FOR MINES.



ELECTRIC LOCOMOTIVE FOR MINES.

Another important feature of mining is signaling from below to the engineer. Of the many devices employed for this purpose, few have proved satisfactory because of the danger of giving wrong signals, thus endangering the lives of employes. This company has recently produced a new signal bell which is designed to overcome these difficulties. It is a positive stroke gong and simply constructed. It has no winding mechanism, and is non-vibrating. No mistakes can be made by the engineer, as only one blow can be struck for each complete turn of the handle of the switch, and the handle cannot be moved backward to ring gong, but must make a complete forward revolution before another blow can be struck. There is also a mechanical trip in the gong itself, which makes it necessary to move the switch handle through a complete turn in order to strike the gong again. One bell will suffice for several levels, but a separate switch is, of course, required on each level.

Coloring Matter from Ruthenium.—Professor Joly, of the Paris Ecole Normale, who has been making a study of the metal ruthenium, claims it to be, of all known elements, that which presents the most original properties. He recently submitted to the Academie des Sciences several samples of a red coloring matter, resulting from an association not yet definitely determined—oxychloride of ammoniacal ruthenium—giving a tinctorial power equivalent to that of the richest dye materials obtained from coal tar, to that of fuchsine, for instance. A five-millionth part of the substance suffices to color water. It dyes silk directly, and the color thus procured is stable. The chemical reactions of this new coloring matter are equally interesting. Acids transform it into yellow, and alkalines bring it back to red.

RECENT DECISIONS AFFECTING THE MINING INDUSTRY.

SUPREME COURT OF OHIO.

Liability for Failure to Prop Roof.

In the action against a coal mining company to recover for death caused by the negligence of one of its employees, the result of his incompetency, it appears by evidence that he was killed by the falling upon him of a portion of the roof of the room in which he was engaged in operating a machine in the mining of coal, which falling was due to insufficient support, and that by reason of a custom prevailing at the mine the work of posting and propping was imposed on an employee called "a filler," whose principal business was that of filling coal, and who had no control over the miner, no relation of subordination or subjection existing between them, but both were under the order of a common superior, called "a mine boss." It was held (a) Such a state of facts does not make a case where the appliance or place is furnished by the master for the work in which the employees are to be engaged, but a case where the furnishing and preparation is itself a part of the work which they are employed to perform in order to effect a common object, viz., the digging of coal, and the relation of the filler to the miner is that of a fellow-servant. (b) In such case the liability of the master is governed by the law applicable to the relation of fellow servant. Hence, in order to attach liability to the company for the negligence in not properly posting and propping the roof it must be shown that the company had knowledge before the accident of the incompetency of the filler to perform the duty of posting and propping, or, by the exercise of due care, might have known it, and that he was himself ignorant of such incompetency, and could not, by the exercise of ordinary diligence, have learned it. (c) And where, by the evidence, it is shown that the deceased knew of the incompetency of his fellow-servant, if it existed, or being an experienced miner, had equal opportunity of knowing, and could have known by the use of ordinary care, and was aware also of the danger of working in a room insufficiently propped, and continued his work without complaint, such a case of contributory negligence is shown as will prevent a recovery.—Consolidated Coal and Mining Company v. Clay's Administrator, 38 N. E. Rep., 610.

APPELLATE COURT OF INDIANA.

Assumption of Risk by Employe.

In a case where the servant is one of mature age and experience, the law never imposes the duty on the master of becoming eyes and ears for his servant, where there is nothing to prevent the servant from using his own eyes and ears to avoid danger. The law requires that men shall use the senses with which nature has endowed them, and when, without excuse, one fails to do so, he alone must suffer the consequences; and he is not excused when he fails to discover the danger, if he made no attempt to employ the faculties nature had given him. Knowledge of the danger upon his part, or the existence of such facts as that by the exercise of reasonable diligence he might have known, ordinarily constitutes an assumption of the risk. The rule that the master is bound to use ordinary care in furnishing the servant a reasonably safe place to work is well settled; but where the danger is equally open and obvious to both the master and servant, and there is no promise to repair or remedy the de-

fect, there is ordinarily no liability on the part of the master.—Salem Bedford Stone Co. v. Hobbs, 38 N. E. Rep. 538.

Liability of Master.

Where the servant is injured through failure of the master to use reasonable care to provide a safe working place, the master cannot absolve himself from liability by showing that he had delegated to an agent the duty of keeping the place safe.—Muncie Pulp Company v. Jones, 38 N. E. Rep., 547.

SUPREME COURT OF COLORADO.

Measure of Damages for Breach of Contract.

Where parties agreed to furnish a certain quantity of sulphide ores to a smelting company for treatment, but the contract did not specify or provide for any particular body of ore, or ores of any particular grade, quality, or value, and the parties failed to furnish a portion of the ore as agreed, the contract was purely executory, and the smelting company could recover no more than nominal damages for a breach, unless they should allege and prove the profits they could have realized from the smelting of such ores, of whatever grade, based upon the smelting charges to be paid. Patrick v. Colorado Smelting Co., 38 Pac. Rep., 236.

The Supreme Court of Washington holds that a provision in an insurance policy that "it is understood and agreed that, during such times as said mill is idle or not in operation, a watchman shall be employed by the insured to be in and upon the premises constantly, day and night," appearing on a small slip of paper pasted on the face of the policy, and having no connection with the warranties or clauses of forfeiture in the policy, is not such a special warranty on the part of the insured that its breach will forfeit the policy or prevent recovery when the loss is in no way attributable to such breach.—Hart. v. Niagara Fire Ins. Company, 38 Pac. Rep., 213.

Brown Coal in Galicia, Austria-Hungary.—In a communication in "Gluckauf," a correspondent says brown coal is found in several places in Austria-Hungary. In West Galicia there is a 23-ft. seam at Tannou composed of 4 ft. of slatey-brown coal, while the upper part consists of good quality bright brown coal. The seam has an east and west strike, and has been proved over a depth of one-fourth mile. The depth of the workings is about 150 ft. A smaller coal seam 3 ft. in thickness, of inferior quality, is found at Neu Laudec on the Dunajec River, and at Niskova. In the cretaceous formation some small seams of lignite are found. In places there are three seams, varying from 1½ to 3 ft. in thickness, but usually there is only one seam of from 3 to 6 ft. The lignite contains 6 to 12% of ash, and contains 12% of water. In the southeast of Galicia there is a coal seam 18 in. thick, extending about 13 miles in length. The coal is a hard black-brown coal (glanzkohle), which breaks into long pieces like wood. These coal mines are chiefly worked by adits. There are altogether 10 brown coal mines in Galicia, but only 5 are now working, employing about 340 workmen.

The Walrond Steel Process as Applied to Cast-Steel Horseshoes.—A process of casting horseshoes out of steel was patented some time ago by James Vernon, Glasgow, and a demonstration of the results obtained was given recently. The apparatus consists of a steel mold in which the shoe is cast vertically. This mold is in two parts, the top of the shoe being molded in one part, and the bottom in the other. The mold is so arranged that the face (in which one-half of the shoe is molded) can be moved forward by a lever directly the shoe is cast, and so relieve this face of the shoe. By another lever the shoe itself is pushed out of the other half of the mold instantly, so that the shoe is perfectly free almost as soon as cast. A similar lever arrangement pushes forward two cutters, which cut off the "heads" the instant the pouring is completed, and another lever pushes forward a set of punches, and punches the nail holes the moment before the shoe is released. The whole of the operations only occupy a few seconds, and the shoes come out very perfect, scarcely requiring any trimming whatever. The steel used is produced by the Walrond-Legenisel modification of the Bessemer process, in which ferrosilicon is added to the converter after the ordinary blow is finished. The converter is then turned up and blown again for a short time, during which the silicon is burnt out, and a very high temperature developed, giving great fluidity to the metal. Very small charges can be blown in this way, the converter used taking only 4 cwt.

Coal Washing.—At a recent meeting of the Yorkshire College Engineering Society a paper upon "The Theory and Practice of Coal Washing" was read by Mr. J. Clark Jefferson, Wh. Sc. The lecturer commenced by pointing out that the removal of clay, slate and other earthy matters from coal led to increased efficiency of the fuel, and that the money thrown away by the consumer in paying coal price for the ash in one ton of coal unwashed is more than the cost of washing that quantity. It therefore follows that clean coal is actually cheaper at the higher price necessary to cover the cost of washing it. The description of the different classes of coal-washing machines which followed showed that all washing operations differ only in the manner in which the water is employed. The different modes of washing are—the fall of the material in still water, separation under the influence of an upward and a downward current, separation by means of a horizontal current and by means of an inclined bed, leading to a sliding or a rolling transport of the material; lastly, by the influence of a rotating fluid. From theoretical considerations it was pointed out that in jigging machines the rise of the water was advantageous, but a rapid fall was distinctly disadvantageous; also that rotary separators were the worst of all machines for washing coal. It was also shown that if the operation was effected under the influence of a rapidly-recurring upward movement of the fuel through stationary water, so that each interval of time was under one-fifth of a second, then the clay would separate from the coal; also the separation was shown to be independent of the size of the particles when screened for the market.

The Dickson Peat Fuel.—The experiments with the Dickson peat fuel plant conducted during the past year by the Ontario Peat Fuel Company, Limited, are said to have proved eminently satisfactory. The methods heretofore adopted have either been simply cutting and drying the raw material, or by using extreme heat in the process of manufacture. Both plans have not succeeded, the first by reason of the light, loose and bulky nature of the article, and the second because of the volatile oils of the peat, which give it real value, were dissipated by the heat, and the fuel was, it is claimed, thereby rendered almost useless. Moreover the process of manufacture was very slow and therefore expensive. The machine which Mr. Dickson has patented completes its work within a few minutes from the time the raw material is taken from the bog, produces the finished article at the rate of two tons per hour and without the application of heat. The peat is pressed to a density practically the same as anthracite coal. Its heating qualities have been demonstrated by comparative tests of peat and anthracite egg made by the Abell Engine Works, Toronto, running a 200 H. P. engine and all the machinery in a large shop. The advantage, however, of peat fuel is its adaptability for domestic purposes. It lasts longer than bituminous coal, makes a bright, warm fire, is perfectly clean, leaves but a small percentage of ash, and it makes neither dust, soot, smoke nor clinkers. It is free from sulphur and will probably cost less than coal. The property acquired in the county of Welland contains about 5,000 acres, for which the company pays the sum of $1,530 per annum for 15 years and thereafter a rental of 25 cents per acre. Peat moss covers the whole area to a depth of about 2 ft., and the company has already cut from an area of about 3 acres something like 2,000 tons. This moss litter is of a superior quality for stable bedding, and it is reported a contract has been made with an American firm to purchase not less than 1,000 tons for the first year and to increase the purchase thereafter by not less than 5,000 tons annually. The price agreed upon is reported to be about $4 per ton delivered at the company's works for all shipments made eastward, and $5 for shipments to Buffalo and westward. The Welland marsh was thoroughly drained by the Ontario Government at great expense some 30 years ago, so the moss is dry. The company has equipped the works and arrangements have been made for immediate railway connection.

PATENTS RELATING TO MINING AND METALLURGY.

United States.

The following is a list of the patents relating to mining, metallurgy and kindred subjects issued by the United States Patent Office. A copy of the specifications of any of these will be mailed by the Scientific Publishing Company upon receipt of 25 cents.

TUESDAY, JANUARY 1ST, 1895.

531,652. Centrifugal Pump. Edward Seitz, and Richard P. Park, Blackburn, Victoria. Combination of a pump frame, a runner, bearings, face plates butting against the bearings and pusher-rods.

531,680. Crusher. Henry A. Hannum, Cazenovia, N. Y. An apparatus comprising a stationary crushing jaw, an opposed rocking jaw, a swinging arm, and a weight on the free end of the arm to increase the momentum thereof.

531,734. Hoisting Bucket. Thomas F. Moore, Buffalo, N. Y. Combination of a hinged bottom, having one of its upright walls provided with internal shaft bearings, a horizontal loop, and an upright rock shaft journaled in the bearings and having a lateral toe.

531,735. Pump. Hans Mortensen, Leadville, Colo. Combination of a vertical inlet pressure column and two vertical discharge columns, a pump inlet, valves, mechanism for alternately opening and closing the valves, and means for forcing water down the pressure column.

531,740. Method of and Apparatus for Mining Gold or Other Metals. Alexander McDougall, Duluth, Minn. Method consists in removing by the action of rake teeth such coarse rocks and other obstructions as are not removable by suction, and then in removing the mineral-bearing sand thus freed by suction.

531,742. Apparatus for Calcining Cement. Jose F. de Navarro, New York, N. Y., Assignor to Alfonso de Navarro, same place. Combination of a furnace and a feeding apparatus and means for moistening the material.

531,746. Dumping Car. Francis Peteler, Minneapolis, Minn. Combination of a car body pivoted upon a standard, held and dumped by means of a chain lever.

531,779; 531,780. Carburetor. Edmond R. Cook, Sacramento, Cal., Assignor of one-half to Warren Drew and Moses M. Drew, same place. A mixing chamber having an air inlet.

531,787. Methods of Removing Sulphur from Deposits Thereof. Jesse A. Dubbs, Pittsburg, Pa. Method consists in melting the sulphur by combustion, and then reducing it to a commercial product.

531,827. Amalgamator. Purdy D Barnhart, Denver, Colo., Assignor of twenty-three thirty-seconds to L. M. Drake, Milwaukee, Wis., and F. D. Underwood, Harwich, Mass. Combination of a sluiceway provided with troughs having rotary cylinders with a series of intersecting longitudinal concavities on their surfaces.

531,850. Continuous Brick Kiln. Charles R. Monroe, Washington, D. C. Combination having an outer wall, its inner surface annular and its outer surface divided into arch-shaped portions.

531,953. Composition of Matter for Binding Coal Dust. Carl Krah, Kreischerville, N. Y. Composition consists of glue, water, shellac, glycerine, chalk and sulphur.

531,967. Stone Drilling Machine. James E. Bachielles, Cherokee, Ala., Assignor of one-half to George E. Burbank, same place. Combination of a frame, or bar having a series of longitudinal slots with pivoted wipers therein, drills provided with a strike mechanism and means for rotating the same.

532,013. Roasting Furnace. Alfred Ropp, San Francisco, Cal. Combination of a roasting chamber having a hearth, a central longitudinal truck chamber provided with a car and a rake.

Great Britain.

The following is a list of patents published by the British Patent Office on subjects connected with mining and metallurgy:

WEEK ENDING DECEMBER 22D, 1894.

1,866 of 1894. O. Hamilton, London. Apparatus for drying white lead.

6,621 of 1894. J. B. Readman, Edinburgh. Making cyanides by heating electrically a mixture of carbonaceous matter and carbonate of barium in presence of nitrogen.

20,422 of 1894. E. Bertrand and O. Theil, Kladno, Bohemia. Manufacture of steel, detailed improvement in patent No. 10,923 of 1894.

20,615 and 20,616 of 1894. F. A. Gooch, New Haven, and L. Waldo, Bridgeport, Conn., U. S. A. Electrolytic reduction of aluminum; introducing steam to the bath.

20,872 of 1894. P. De Wilde, Brussels. Cyanide recovery of gold, bringing the solution of KCy into contact with minium or massicot before sending it to the tanks.

WEEK ENDING DECEMBER 29TH, 1894.

24,939 of 1893. H. L. Sulman, London. Recovering float gold, by adding to the milling water substances such as soaps, which reduce the surface tension of the water.

2,618 of 1894. A. Crossley, Cwmavon, South Wales. Production of ferro-ferric and ferric oxides; an improvement on patent No. 12,813 of 1891.

2,696 of 1894. A. R. Davis, Manchester. Production of sulphate of manganese by adding peroxide of manganese to a solution of ferrous sulphate.

21,326 of 1894. J. Furbinger, Bohemia. Improvements in muffle furnaces.

PERSONAL.

Richard A. Parker, a well-known mining engineer, will start shortly for British Columbia, and go from there to California on professional business.

Mr. Martin Buckley, of Butte, Mont., has been appointed superintendent of the Hope Mine at Basin, Mont., in place of Mr. George F. Kellogg, who has resigned the position.

Mr. Franklin Ballou, manager of the Bimetallic Smelter at Leadville, Colo., was run over by a runaway team of horses on January 2d, and so severely injured that it is feared he may die.

Mr. J. B. Tyrrell, geological surveyor of the Dominion Government, with his party, arrived at Winnipeg, Manitoba, on January 8th after an absence of six months on a journey to the shores of Hudson Bay.

Mr. John F. Blandy, mining engineer, of Prescott, Ariz., has been dangerously ill at his home during the past month. He underwent a dangerous surgical operation a fortnight ago. The latest advices, we are glad to say, are that he is improving.

Secretary of War Lamont has sent to the House of Representatives the report of the Engineer Corps on the preliminary survey of Cooper Creek, N. J. The plan of improvement submitted proposes dredging a channel 70 ft. wide and 18 ft. deep from the mouth of the creek to Browning's chemical works, and estimates the cost of the work at $35,000.

Mr. James W. Godfrey, formerly general manager of the New York Insulated Wire Company, has resigned, to take charge of the sales department of the India Rubber and Gutta-Percha Insulating Company, manufacturers of Habirshaw "Standard" and "White Core" insulated wire. Mr. Godfrey has opened an office at No. 15 Cortlandt street, New York.

OBITUARY.

Edward D. Porter, dean of the Agricultural College of the State University at Columbia, Mo., died on January 5th.

Charles S. Hill, an eminent statistician, organizer, promoter, and secretary of the American Statistical Association, died on January 4th at Washington, D. C. He was at one time connected with the Department of State, and was a prime mover in the publication of the consular reports, by which the commerce of the country has been much benefited.

Percy Davis, the son of Mr. Samuel K. Davis, the well known mining broker of Helena, Mont., was accidentally killed at the Park mine at Park City, Mont., on December 19th. He was working in the bottom of the shaft when the ore bucket, which was being hoisted, became loose and fell, striking him on the head. He died almost instantly. Together with Messrs. McDowell, Ide and Kepner he secured a lease and bond on the mine about three months ago. He was a civil engineer by profession and was deservedly popular with all who knew him. He was only 25 years of age.

Edward Hartsinck Day, Professor of Natural Sciences at the Normal College, died on January 4th at Algiers, where he had gone on a leave of absence to regain his health. Professor Day, who was a younger brother of Sir John Day, one of the three Chief Justices of England, was born at Bath, England, in 1833. His education was obtained at the Roman Catholic College of Downside and the London School of Mines. During his early years his interest in geology led to his becoming associated with Professors Huxley, Owens, Hawkins and Ethridge in the Geological Society's work, in which he aided materially in mapping out the geological formation of England's southern countries. He made the first geological survey for the proposed English Channel tunnel under the direction of Sir John Hawkshaw. Professor Day came to New York in 1866 as assayer to a Montana mining company, and later accepted the post of Assay Master in the Columbia College School of Mines. At the death of Professor Redfield, in 1872, he was elected to the chair of Natural Science in the Normal College, and held it at the time of his death. Owing to heart failure and pulmonary troubles he was obliged to abandon his work about two years ago.

SOCIETIES AND TECHNICAL SCHOOLS.

Canadian Society of Civil Engineers.—At the Regular meeting in Montreal, January 3d, a paper on "Resistance of Piles," by Mr. H. F. Pearly, was read. The discussion on Mr. Hogg's paper on "Transportation of Our Inland Waterways and Canals" was continued. The meeting also took action on the arrangements recommended for the annual meeting.

Society of Chemical Industry, New York Section.—A meeting was held at the College of Pharmacy, 115 West Sixty-eighth street, Monday, January 7th. The following papers were read: H. Endemann, "Some Applications of Magnesia Obtained as a By-Product from Production of Carbonic Acid from Magnesite"; Emil E. Lungwitz, 1—"Notes on the Analysis of Whale Oil." 2—"Notes on the Analysis of Lard Oil," 3—"The Correct Iodine Number."

Technical Society of the Pacific Coast.—A regular meeting was held January 4th in the rooms of the society in the Academy of Sciences Building in San Francisco. The nominating committee reported a list of officers to be voted for for the ensuing year. Mr. John Richards read a paper on "Pressure and Impulse in Motive Engines—A Look Into the Future," and Mr. Arnold d'Erlach presented some notes on the "Latest Project for an Alpine Tunnel at the Simplon."

Ohio Institute of Mining Engineers.—The annual meeting takes place January 16th at Columbus, O. Among the papers to be read are the following: "Long Wall Mining and its Merits," Thos. West, Dell Roy, O.; "Spontaneous Combustion in Mines," John P. Jones, district mine inspector, N. Lawrence, O.; "Protection to Miners," Hon. Andrew Roy, M. G., Glen Roy, O.; "What I Witnessed while District Inspector of Mines," John E. Short, ex-district mine inspector, Carbon Hill, O; "Coal Fields of Jackson County," J. A. Ede, C. and M. E., Jackson, O.; "Steel Outside Rigs," Harry J. Lewis, C. E., Pittsburg, Pa.; "Practical Mining," Thos. H. Love, district mine inspector, Leesville, O.; "The Explosive Character of the Blanch Mine at Colliers, W. Va," William Hibbs, C. and M. E., Scio, O. The afternoon session on Thursday will be held at the Ohio State University, where the members will inspect the manual training school and its equipment, also the fine electrical power plant there in use. The principal features of the visit will be to give to the members an opportunity to inspect the special mining department and the new clay working school. The Institute will then visit the Geological Museum.

Engineers' Club of St. Louis.—At the 409th meeting, held on January 2d, Col. E. D. Meier read a paper on "Chimneys and Chimney Drafts." The subject was considered with special reference to modern boiler practice and American coals. Computations usually made of stack capacity assumed the chimney gases to be of the same specific gravity as air. This is not true, as when combustion is complete the gases are really a mixture of carbonic acid gas, nitrogen and steam; the proportions varying with different coals. As these require different amounts of air, the varying weights of the gases of combustion cause a difference in the draft power of the same chimney. It is rare that just the proper amount of air is admitted, and there is a loss when the mount is too little or too great. Very often there is a surplus, reaching sometimes as high as 100%. Tables were presented showing these facts clearly for five well-known coals: Anthracite, New River, Youghioheny, Mount Olive and Collinsville. Computations were made showing how the capacity of a chimney could be increased much beyond the normal by raising the temperature of the gases, the result always being accompanied by a corresponding loss in efficiency. It was shown that the same capacity could be obtained without loss of efficiency by increasing the height of the chimney. A table was given showing the changes in the capacity of a given chimney by varying the temperatures of the gases; also the change of height necessary while maintaining a constant temperature. Another table showed the effect of different coals on the velocity of the gases, and on the areas of chimneys, the velocity being kept constant. The chimney formulæ of Smith, Kent and Gale, and the experiments of De Kinder were discussed. A table was given showing appropriate heights and areas of chimneys for powers from 75 to 3,100 H. P., assuming 7 lbs. of water evaporation per pound of coal, and 5 lbs. of coal per horse power per hour. The effect of long flues leading to chimneys was also discussed. It was shown that where a number of boilers were to be connected to the same stack, its dimensions could be reduced proportionately after the first few boilers, as they would never all be fired at the same time. The discussion was participated in by Messrs. Hermann, Ockerson, Bryan, Holman and Kinealy. It was shown that large chimneys almost always overrun their capacity as computed by the best formulæ. It was believed that the table presented by Colonel Meier while authorizing the working of chimneys to larger capacities than heretofore deemed advisable, was still conservative, and that in emergencies the chimneys could be worked much beyond the ratings given. Mr. Russell explained an ingenious method which had recently been resorted to at the inlet tower of the new water-works at the Chain of Rocks for cutting off the timber of the old cofferdam under water.

INDUSTRIAL NOTES.

The Delaware Iron Works, at Newcastle, Del., started up January 7th after a short stoppage.

The Youngstown Bridge Company has received a contract to build an iron viaduct 4,000 ft. long from Padre Island into the Gulf of Mexico.

It is announced that the furnace of the Richmond Iron Company, at Richmond, Mass., is ready to go into blast. It has recently undergone repairs.

The New Glasgow (Canada) Coal, Iron and Railway Company, manufacturers of "Ferrona" pig iron, has amalgamated with the New Glasgow Steel Company.

On January 2d the fires were started in Alice furnace, Birmingham. The latest reports received state that the furnace is now in good shape, and rapidly increasing its daily output.

The Alabama Rolling Mill Company, at Birmingham, Ala., will put its puddle mill in operation shortly, and its finishing mills will go on double time in all departments soon after.

The Carnegie Steel Company has received a request from the Swedish Government to bid for the construction of armor plate for the new battleship which Sweden is about to construct.

The old Charlotte furnace at Scottdale, Pa., which was purchased in August last by the National Pipe and Foundry Works, has been leased by them to Eastern parties, who will, it is stated, make the necessary repairs and soon put it into blast.

The Youngstown Bridge Company was awarded the contract for the Madison Avenue bridge at Indianapolis, Ind., consisting of one span of 83-ft. girders. This company also has the contract for a 4,000-ft. double track ocean pier for the Padre Island Harbor Company, Corpus Christi, Tex.

The new car barn for the Lehigh Traction Company, at Hazelton, Pa., is to be built by the Berlin Iron Bridge Company, of East Berlin, Conn. The same company has a contract for the new power house for the Keene Gas Company, at Keene, N. H., and is putting up a large iron bridge at Collinsville, Conn.

The Westinghouse Electric and Manufacturing Company has commenced to ship the first of the electrical machines made by it for the Cataract Construction Company, which is putting up the plant for the utilization of the Niagara Falls water power. There have been ordered three dynamo electric generators, each of 5,000 H. P.

The work of constructing the blast furnaces of the Hamilton Iron and Steel Company, at Hamilton, Ont., has been somewhat retarded and the works will not be ready for operation on the 1st of January next, as at first expected, but the assurance is made that they will be completed and in operation by or before July 1st next. About $80,000 has already been expended upon the plant.

The Boviard and Seyfang Manufacturing Company, of Bradford, Pa., with branches at McDonald, Butler, and Pittsburg, one of the largest oil-well supply establishments in the oil country, which went into the hands of a receiver on December 1st, 1893, has made arrangements with its creditors, and Judge Morrison has discharged the receivers, James E. Cochrane and Thomas Kennedy, of Bradford.

The Junction Iron and Steel Company has succeeded to the business of the Laughlin and Junction Steel Company, at Mingo Junction, O. The company will continue the production of pig iron, ingots, blooms, soft steel, etc. Contracts for additional facilities have already been placed, and after February 25th the company will be prepared to furnish soft steel, tin plate, sheet bars, and small steel billets suitable for railway and implement material.

Messrs. B. D. Wood & Sons, New Orleans, La., are about to erect machinery for the rapid and economical handling of coal. The coal is to be unloaded from Mississippi River scows and loaded into cars on a siding. To accomplish this they are installing a Hunt duplex shovel of exceptionally large size. To carry back the coal from the elevator, cable cars are to be used, which will dump the coal into pockets, from which it will be drawn into cars on the railroad track.

For the past 12 years the Western Chemical Company's works at Denver, Colo., have been among the principal manufacturing industries of that city. Within the last two years, under the management of Mr. J. C. Skinner, the capacity of the works has been doubled, the manufacture of sulphuric acid alone being now 10 tons per day. It has just finished building some new furnaces and a fine office building, and is supplying trade in all the territory tributary to Denver and into Mexico.

The Union Iron and Steel Company, of Youngstown, recently made a proposition to its puddlers asking them to accept $3 per ton, a reduction of $1 per ton. On this basis the company guaranteed the men steady work for three months. The company stated that at that price operations would be continued even if the iron had to be stacked in the warehouse. The men have not yet given their answer, but an official of the Amalgamated Association is quoted as saying that they should not accept.

The annual ordinary general meeting was held by the Okonite Company, Limited, at the New York office of the company, No. 13 Park Row, December 27th, 1894, Mr. Edward Lyman Short presiding. A large percentage of the stock was represented. Reports from the heads of the several departments showed a good business transacted by the company during 1894, and substantial indications that the business of the new year just entered upon is to be still better. The meeting adjourned after re-electing the auditors.

The Ogden, Utah, Chamber of Commerce has formally accepted the proposition of Mr. A. Evans to establish in Ogden iron blast furnaces and foundries. The proposition in general terms is to invest $150,000 in a plant, work to be commenced within 60 days, the city to pay a bonus of $25,000 therefor, $1,000 at the investment of every $6,000 by Mr. Evans after he has purchased the land. The Chamber of Commerce

United Mine Workers and connect themselves directly with the General Assembly of the K. of L. Should the Mine Workers' officials win, the result will be a loss of 8,000 members to the K. of L., and should Hayes and Sovereign come out victorious, the result will be practically a disorganization of the Mine Workers' organization.

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The National Executive Board of the United Mine Workers' Union, which has been in session at Columbus, O., has completed its work. President Penna and Secretary McBride will complete the arrangements for the convention to be held at Columbus on February 12th. There will be two conventions, one of which will be composed of delegates from local assemblies of the Knights of Labor attached to District 135, and the other will be a joint meeting of Knights of Labor and Progressive Union delegates composing the United Mine Workers' Union. The greatest interest hinges on the probable action of the K. of L. convention, which will meet on February 11th. Upon it depends to a great extent the business which will be transacted by the other convention, which is to meet the following day.

Phosphor-copper and phosphor-bronzes are being more and more extensively used. The peculiar change which copper and bronzes undergo when fluxed with phosphorus are not well understood, but the effects are fully appreciated, strength and toughness are increased and liabilty to corrosion decreased. For these reasons phosphor-bronzes are being used very largely in marine and railway construction. The charging of the phosphorus into the molten metal must be done with considerable system and care. This part of the operation may be accomplished by the aid of phosphorous chargers or phosphorizers made of plumbago. The Joseph Dixon Crucible Company, Jersey City, N. J., which manufactures plumbago goods for metallurgical purposes, make these phosphorizers in different sizes, suited to the size of the crucible in which the fluxing is to take place.

On January 5th, in response to an invitation from The Electric Fireproofing Company of New York, about 150 persons, including many prominent city and railroad officials, gathered in the vacant lot between Fifty-eighth and Fifty-ninth streets, on Broadway, to witness a test of its system of fireproofing. A small building had been erected of nine different kinds of wood, which had been subjected to the fireproofing process. The structure was complete in every detail, and was decorated inside with lace curtains and drapery, one-half of which had been treated, the other half being in its normal condition. A match was applied to this drapery and the untreated portion was consumed in a twinkling, that treated with the fireproofing remaining intact. The principal test was then made. Inside and outside the building was piled a cord of pine wood, 4 bbls. of shavings and pine blocks, and over this was poured 6 gals. of kerosene oil. A portion of the structure burned, but the wood treated simply carbonized, and when too weak to hold together fell down without flaming.

In a recent communication, Frazer & Chalmers state that a Brown horseshoe furnace manufactured and sold to the Consolidated Kansas City S. & R. Company, Argentine, Kansas, now erected and in constant operation, is roasting copper matte to a sulphate at one operation. This horseshoe furnace was purchased by Mr. A. R. Meyer, after his engineer had examined the furnace built for the Glendale and Collinsville Zinc Works. Mr. Meyer writes that it is working 22 to 23 tons per day up to 90% copper extraction (soluble copper), and that the iron is roasted to a proper condition for the Hunt & Douglas process, all of this being done at one operation and without any difficulty. They are still experimenting at Argentine to improve the operation and are gradually getting their product into better shape. Mr. Meyer admits, however, that what is now being accomplished is thoroughly practicable and satisfactory, and that by the introduction of the furnace a saving of not far from $100 per day has been accomplished. Two of these furnaces are in operation at Leadville, Colo.; one in the works of the Union Smelting Company, the other at the Arkansas Valley Works. Mr. Frank Officer, of the Mingo Smelter, of Salt Lake City, Utah, recently visited Leadville, and expressed the opinion that the horseshoe furnace was superior to any other furnace he had knowledge of. Mr. Officer visited Leadville in order to determine the value of the furnace on lead sulphides, as it is for treatment of this class of material that the Union Smelting Company has erected the horseshoe in its smelter.

MACHINERY AND SUPPLIES WANTED.

If any one wanting machinery or supplies of any kind will notify the "Engineering and Mining Journal" of what he needs he will be put in communication with the best manufacturers of the same.

We also offer our services to foreign correspondent who desire to purchase American goods, and shall be pleased to furnish them information concerning goods of any kind, and forward them catalogues and discounts of manufacturers in each line.

All these services are rendered gratuitously in the interest of our subscribers and advertisers; the proprietors of the "Engineering and Mining Journal" are not brokers or exporters, nor have they any pecuniary interest in buying or selling goods of any kind.

GENERAL MINING NEWS.

(From our Special Correspondent.)

It is generally understood that there has been at least partially arranged a deal for the pooling of the output of the three big Bessemer producers, the Minnesota Iron Company, the Norrie and the Colby group of mines on the Gogebic, under which they will work harmoniously in the direction of getting a good price for their product. Rumor sets the price to be obtained for 1895 at about $3.50 for the standard Bessemers such as these mines produce. While the deal has probably not been closed, that it will be soon, or so most mining men who are on the inside expect.

These three companies mine about three fourths of the strictly Bessemer ore of the Lake Superior region, and their output in 1895 is expected to be not far from 3,000,000 tons.

ALABAMA.

Tuscaloosa County.

It is reported that extensive developments will be made in coal lands lying along the Warrior River, with a view to mining and shipping by barge to Mobile.

ALASKA.

Alaska Mexican Gold Mining Company.—The clean-up for the month of November is reported as follows: Period since last return, 30 days; bullion shipped, $13,864; ore milled, 6,058 tons; sulphurets treated, 137 tons. Of bullion there came from sulphurets $4,431. The working expenses for the period were $11,819, leaving a balance of $2,045 as profit for the month. The average total return was $2.29 per ton, and the expenses $1.95 per ton of ore milled.

Alaska Treadwell Gold Mining Company.—The December clean-up is reported as follows: Shipment of bullion, $14,347; ore milled, 19,807 tons; sulphurets treated, 375 tons. Of bullion there came from sulphurets $14,615. The gross expenses for the period have not yet been ascertained. The bullion yield for the month was $2.24 per ton of ore milled.

CALIFORNIA.

Eldorado County.

(From our Special Correspondent.)

Church Mine.—This property is located near Diamond Springs. The plant has cost $300,000. There is a fine 10 stamp mill at work and the vertical triple compartment shaft has recently been sunk 200 ft. to the 1,200 ft. level.

Starlight Mine.—This mine, located two miles from Eldorado, was sold recently by Geo. C. Hawley to D. W. C. Morgan, a well known miner, for $25,000. The mine has been idle for the past 15 years. Three shafts are sunk on the property, one of which is down 300 ft. There are 2,000 tons of ore on the dump now and the owner will start a 10-stamp mill very soon.

Siskiyou County.

Siskiyou Gold Development Company.—This company has filed articles of incorporation at Salt Lake City, Utah. The capital stock is 1,000,000 shares of the par value of $1. The Board of Directors consists of W. S. McCormick, president; A. Hanauer, Jr., vice-president; John R. Middlemiss, secretary; James Glendenning and D. P. Tarpey.

Tuolumne County.

(From our Special Correspondent.)

Miller & Holmes, Gray Eagle and Knox & Boyle Gold Mines.—These mines, near Poverty Flat, have been purchased by the stockholders of the Oak Hill and Ætna quicksilver mines, and will be consolidated and operated under their management. It is the intention of the new owners, the heaviest of whom are Boston men, to devote a large capital to develop this property. A mill will be erected and a large force of men employed.

COLORADO.

(From our Special Correspondent.)

Accident.—The work of sinking in the Accident has been completed, and drifts both ways upon the contact are being started from the bottom of the shaft.

Ætna Argent.—A lease has been granted upon that portion of this property lying above the level of the Cowenhoven Tunnel, and work has been commenced upon a body of high grade ore near the line of the Mineral Farm.

Ashcroft District.—In the neighborhood of Ashcroft, the Montezuma and the Express group are working this winter on a small scale. The former mine is producing some fair ore, but the latter has no considerable body of ore.

Coal Mines.—State Coal Mine Inspector Reed has submitted his report to the governor. It shows that the product of coal in the State for 1894 was 2,994,028 short tons, a decrease of 953,028 tons from 1893's production. This is attributed to the coal miners' strike last summer. About 25% of this coal found a market in Texas, Kansas, Nebraska, Nevada, Utah and New Mexico. During the past year there were 19 fatal accidents, being one to every 318 men employed, and one to every 157,580 tons produced. The market value of coal at the mines is estimated at $1.60 per ton, the average price paid being 69c. per ton. The average wages for the year was $341.69. The average daily wages is $1.08. The number of miners employed has been 6,046.

Famous Concentrator.—This plant is now running only one shift, and is concentrating only ore from the Little Annie mine.

Mollie Gibson Consolidated Mining and Milling Company.—This company has made a connection with the Smuggler mine, so that in the event of a serious accident to the pumps in the latter mine those of the former may be able to control the water, which would otherwise place them in a position of considerable danger. The Smuggler mine is constantly increasing its pumping capacity. In both the Mollie Gibson and in the Argentum and Juniata work is being actively carried on in the drift, which is being driven to connect the two properties. The Argentum and Juniata is shipping regularly.

Clear Creek County.

In speaking of the advance of Idaho Springs as a milling center during the past year, the Idaho Springs "Mining Gazette" says: A year or so ago the possibilities of this section as to gold production were undreamed of. Outside of the Shatter mine the production of free milling dirt was so small that stamp mill men found it hard work to keep running. The practice of leasing dumps was resorted to in some cases. However, the decline in silver mining necessitated giving attention to other pursuits, and this led to the discovery of value in what had been considered worthless dumps and veins. Steadily the work has proceeded and the field is widening. The Newton and General Thomas were opened up. Yankee Hill opened the eyes of the oldest inhabitant; Fall River, Mill Creek, Trail Creek and Freeland, Dumont, Gold Dirt District, Empire, Virginia Canon and Gilson Gulch, all contributed to build up a new industry. New stamp mills were built and have been followed by concentrators. To-day Idaho Springs can treat any kind of ore found within the two counties economically and successfully. Good water power and abundance of good, clear water are great considerations, and we are happily blessed with both.

Dolores County.

Mount Wilson District.—In speaking of the progress of the Mt. Wilson district during the past year, the Rico "News" says: A large number of men are engaged at mining and prospecting around Mount Wilson with encouraging results. The most prominent strike of the season was a tellurium property discovered early last spring in Bilk Creek basin by Jack McCulloch, who is now developing the property in a systematic manner. The pay streak averages 5 to 7 in., and runs high in gold. An offer of $25,000 for the property has been refused. Considerable placer mining in a small way has been done on the headwaters of Bear Creek, Elk Creek and other tributaries of the San Miguel. In Navajo basin, which is on the Dolores county side of the watershed, there are over 20 miners engaged in development work on their own properties, and all feel highly encouraged with their prospects. A majority of the ores in this district carry gold in paying quantities.

Shipments of ore from Rico during 1894 amounted to 1,626 cars, of which 464 cars were from the Rico-Aspen and 286 cars from the Enterprise Mining Company.

Fremont County.

United States Economic Reduction Works.—These works at Florence started on January 1st on a lot of ore from the Victor mine at Cripple Creek.

Union Oil Company.—This company, which is now operating at Florence, is reported to have made a rich strike of oil. On January 1st while the work was steadily progressing, a flow of oil was struck with a 50 lb pressure, while all other former strikes have not been stronger than nine ounces. The well in which the strike was made is situated at Coal Creek, about two miles from Florence. The strike has created quite an excitement. The company, it is said, is making arrangements to build an extensive plant in the district to handle the amount of oil which will be henceforth produced.

Lake County—Leadville.

(From our Special Correspondent.)

Double Decker.—The lessees have just encountered another body of good ore in this property. It was opened up from the 100 ft. level of the main shaft, and good gold and silver returns are given by the assays.

Great Hopes.—Lessees have secured a lease on this group of claims, and a big plant of machinery, including a 40 H. P. boiler, is being placed in position. Sinking operations will be resumed this week.

Leadville.—This property located at the extreme end of the Leadville gold belt, reports a good strike. The ore body is large and rich. The mineral contains gold, lead and silver, and has all the characteristics

of the Lillian ore chute. The Leadville lies on East Bald Mountain at the head of California gulch.

Lone Jack.—The company working this property in the Alicante district is headed by A. Sherwin and James Campbell. A gold lead was recently opened up, assays from which run high. Preparations for increased work are being made.

Mahala.—During 1894 this property yielded largely from the first contact, and the second contact is now being explored. This same ore chute has now been opened continuously through the Mahala, Greenback, Gonabrad and R. A. M. to the Mikado fault.

Sambo.—A strike is reported in this mine, in the Leadville district. Mr. P. C. Stevens, a mining man formerly of Leadville, with Samuel McMillan and J. C. Boyd, of Denver, purchased the Sambo property. They started sinking the shaft, which was then down 150 ft., and after sinking 25 ft. a good ore body was encountered. Up to the present time the mineral has been sunk through to the depth of 4 ft. and still continues. Assays made last week showed returns of ½ oz. in gold and 5 oz. in silver.

Silver Standard Group.—These claims are excellently located in Iowa gulch, and a strong company has been formed to operate the group. A new shaft is to be sent down as fast as possible with the expectation that the rich ore chute of the Nisi Prius and Crown Point will be discovered in this ground on its southern extension.

Smuggler.—Recent developments in this mine have resulted in the opening up along the quartzite contact of a fine ore body, assays of which run 120 oz. silver, $\frac{1}{10}$ of an ounce of gold, and 30% lead to the ton.

St. Louis.—At the 200 ft. level a fine body of carbonate ore has been opened up. The developments are very satisfactory, and shipments are regular.

The Gold Belt.—Activity all along the line is noticeable. New shaft houses are going up from Empire Gulch to Big Evans, and the territory is being explored from Mosquito pass to the most westerly edge of the gold area. The land office is daily crowded with people looking for an eligible location, and every fraction of ground along the entire gold belt is being nabbed.

Yak Mining Company.—The management is pushing ahead the mammoth silver cave tunnel, and at the same time are developing the big ore bodies. Recently another large ore body was opened up in new workings. The ore is low grade, but can be profitably treated by the Yak concentrating mill, which is running steadily.

Park County.

Balfour Gold Mining and Milling Company.—In drifting back to cut the vein in this company's property the miners have passed through 33 ft. of dolomite lime. The pyritiferous porphyry vein is overlaid by white porphyry, as shown in the surface trenching done before starting the shaft. Development will soon be resumed in the Balfour shaft.

Black Joe.—The machinery has run continuously since it was set up about a month ago. A drift 28 ft. long and another 7 ft. and about 20 ft. of sinking has been done in that time. The owners will now sink to a depth of 159 ft. before they do any more drifting.

Croesus Gold Mining and Milling Company.—Development will be resumed in the already large body of low-grade sulphide ore developed in this property. Although the Croesus shaft is only 50 ft. deep, still, as the vein dips at an angle of 45°, this perpendicular shaft shows what an extensive vein the company has. In sinking this 50 ft. the Croesus ore vein increases very rapidly in appearance and value, says the Balfour "News." The bottom of the shaft is now in peacock iron running between $6 and $7 per ton.

Evening Star.—Work is being pushed on this property. The shaft is down 50 ft., with good indications. The vein matter shows as much mineralization at the present depth as has been found before in the shaft. Some fear is expressed that a large flow of water will be encountered in a short distance from the present depth, from its nearness to the Black Joe property, which is a wet shaft.

King of the Rockies Mining Company.—The shaft on this company's property at Balfour is now down 235 ft.

Pitkin County.

During the last week in December the average number of notices in lieu of annual assessments on mining claims filed at Aspen with the clerk and recorder was 265 per day. The last two days reached as high as 500 each.

FLORIDA.

The Peace River Phosphate Mining Company has been organized at Savannah, with a capital stock of $1,250,000, all paid in, and with permission, if so desired, to increase this amount to $5,000,000. The new company is the consolidation of the Peace River Phosphate Company, the De Soto Phosphate Mining Company, the Charlotte Harbor Phosphate Company, and the Arcadia Phosphate Company. This is considered the most important move in phosphate circles in many months, as it is a consolidation of all the companies now operating on the Peace River. The officers of the new company are as follows: President, Joseph Hull, of Savannah; vice president, M. F. Knudson, of New York; treasurer, R. W. Patterson, of New York; secretary and assistant treasurer, H. P. Richmond, of Savannah; directors, George W. Scott, of Atlanta; H. M. Comer, Joseph Hull and H. M. Comer, Jr., of Savannah; R. W. Patterson and M. F. Knudson, of New York. The new company controls about 90 miles of the bed of Pease River and the adjacent valley, amounting in all to about 24,000 acres of phosphate land. The territory of the company begins at Bowling Green and ends at Charlotte Harbor, Punta Gorda being the shipping point.

IDAHO.

Alturas County.

Camas No. 2.—Ten stamps of the Camas No. 2 mill were started up last week. The other 10 stamps are about ready, and will begin dropping at once. Until they do the mill will make 3 to 4 tons of concentrates per day, worth between $70 and $90 per ton, besides what free gold will be caught on the plates. The mill is very old, says the Hailey "Times." It was old 10 years ago, when put up at the No. 2, but improved until it is almost as good as new. When it reaches its maximum it should reduce 30 tons per day.

Goffre.—The lessees of this mine, says the Hailey "Times," are not shipping as much ore as usual, because they have extracted all that was most easily taken out. There is some yet in sight, but by doing some deadwork it will be extracted more cheaply. This deadwork is now being done, and will require some time. As soon as it shall be completed the extraction and shipment of ore will be resumed.

Kootenai County.

(From an Occasional Correspondent.)

Lakeview District.—The prospects of this camp are encouraging. Archie O'Donnell has struck good ore in the "Conjecture" showing native silver with an average grade of 48 oz. silver and $4 in gold. Mr. Flewelling found the extension across the gulch showing over 70 oz. of silver and $3 in gold. Mr. Steffing in the Keep Cool mine is developing a good body of galena ore, rather low grade as yet in the tunnel, but he expects soon to strike the chute of high grade that shows 70 ft. above.

Weber.—The owners of this mine at Lake View, Pend d'Oreille Lake, have completed arrangements with Eastern parties by which the mill will be completed and put in operation as soon as possible. This mine is well opened now showing a great ore body of fair grade and chutes of ore rich in gold and silver. It will be put in good condition while the mill is being completed. The mill will use the combination process. The mine has been sampled and examined by an engineer of experience who has reported favorable on it.

Shoshone County.

(From an Occasional Correspondent.)

Frisco.—This mine has stopped all work, excepting by about 20 men timbering up. It is supposed this will stop in a few days.

Gem.—This mine, on Canon Creek, has closed down.

Tiger.—This mine is reported ready to stop soon. This will leave the Poorman mine the only one of importance running. Wallace is full of idle men. It looks as if the mines had at last recognized the fact that it was not profitable to exhaust their ore bodies and get nothing from them.

INDIAN TERRITORY.

The Kiowa Coal Company has filed articles of incorporation at Little Rock, Ark., with capital stock of $100,000. The company will operate and lease coal mines at Kiowa, and have its main office at Chilton, Mo.

KENTUCKY.

Logan County.

Consolidated Asphalt Company of Kentucky.—It is reported that this company has purchased from Theodore Becker 704 acres of land containing asphalt. The price is stated at $100,000.

MICHIGAN.

Iron—Marquette Range.

Cleveland Iron Mining Company.—The ore deposit recently uncovered on this company's land near the Lake shaft continues to show up well, says the Marquette "Mining Journal." The deposit has been traced 60 ft. north and south and about 50 ft. east and west. A drift large enough to allow a gang of men room to work is being driven across the vein. The drift is in ore, and its opening is so near surface that the ore is taken out with a wheelbarrow. The drift is being driven at this point to test the width of the vein, and also to enable the company to form some idea of the quality of the ore. A diamond drill is being set up near where the ore was first discovered. A vertical drill hole will be sunk to determine the depth of the deposits. There are several men employed there at present, a night shift having been recently put on. The ore being taken out of the drift looks better, if anything, than that first encountered in the ditch. Only one assay of the ore has been made. The result of that was most encouraging, the ore running 65% of iron and ·012 in phosphorous.

Lake Superior Iron Company.—The Hematite workings—including the Lake shaft and old Hematite mines—of this company have closed down for an indefinite time. During the past few months about 100 men have been employed in both places, the force in the old mine being very small. The majority of the Lake shaft and Hematite forces, says the Marquette "Journal," will be transferred to Section 16 mine, while a few will be given places at the No. 2 hard ore mine.

Iron—Menominee Range.

Aregon Iron Mining Company.—This company has ordered its mines closed on January 12th, throwing some 300 men out of work. The reason given for the suspension is that the company can earn no profit unless the fee owners reduce the royalty charge, which they have so far refused to do.

MINNESOTA.

Redwood County.

(From our Special Correspondent.)

Minnesota Gold Mining and Refining Company.—Since the public exposure of the methods of this company, at Redwood Falls, all work at the mine stopped, and the men have been unable to get their pay.

Iron—Vermilion Range.

(From our Special Correspondent.)

At Ely, near the Chandler mine, a shaft has been sunk in a quartz vein that carries considerable gold. Assays show fairly satisfactory returns. It is expected that work will be resumed in the spring.

Iron.—Mesabi Range.

(From our Special Correspondent.)

The Duluth & Iron Range road is building about 50 ore cars, and will order some 500 more for spring delivery.

Alpena.—Cole & McDonald, diamond drill operators, have been drilling on the Alpena, 1½ miles from Virginia, and have proved the former estimates of 6,000,000 tons to be low. They have gone back to the Moose, and will soon explore the Towanda, near McKinley. The original grading of the Duluth & Iron Range road's Mesabi branch ran through a large body of ore on this property.

Cincinnati.—This company has secured a reduction in royalty to 30c., and in minimum from 150,000 to 30,000 tons annually. It is claimed that work is to go forward at once.

J. M. Williams vs. McKinley.—The United States Court has decided the suit of J. M. Williams vs. the McKinley's, of Duluth, for the recovery of the stock sold and the earnings in bonuses of several Mesabi mines. The plaintiff is given judgment for about $70,000.

Longyear & Bennett.—This firm has shown up on lands belonging to Wright & Davis and themselves about 11,000,000 tons of bessemer and 3,500,000 tons of brown ore. The bessemer averages about 64·20 iron and ·040 phosphorus. Some 5,000,000 tons of the bessemer lies in a channel 74 ft. thick and covered by 36 ft. of surface, which, it is believed, can be profitably stripped.

Mahoning Ore Company.—The average of phosphorus in the ore is said by outsiders to be ·070, but the high phosphorus ore is so located that it can be sorted out, which is not the case with most of the Mesabi ores. Stripping is going on very rapidly. It is expected to have uncovered a surface that will allow mining 300,000 tons in this year.

Oliver Mining Company.—Mr. H. W. Oliver, of this company, which has been at the bottom of the agitation for the reduction of Minnesota state royalties and the cutting down of rail rates from the mines to lake, has been in Duluth the past week. I have it from the best authority that Mr. Oliver is not at all anxious that this matter should be pushed, and it is claimed he has secured all he needs in the way of concessions. If this is so the Oliver will be worked very heavily next season. There is not much chance that the State will reduce its royalty of 25c. a ton, or that a lower rail rate can be secured for the open market.

MONTANA.

Deer Lodge County.

Montana Mining Company, Limited.—A report just issued by the London office of this company says the approximate financial position of the company to the end of December may be summarized as follows: Cash and other assets on November 30th, £44,008; estimated profit for December, £3,000; total, £47,008. Deduct dividend of 6d. per share declared, payable on January 7th, 1895, £16,428, leaving £30,580. Add to this is a share, not called up, would produce £32,856, making the total available assets £63,436. In addition to the above the estimated value of stores at the mine on November 30th was £11,219. Mr. R. T. Bayliss in reporting on the mine says that in the Drumlummon lode on the 500-ft. level a small body of low-grade ore has been developed, about midway between No. 1 and No. 2 shafts. On the 900 ft. level a crosscut from No. 1 shaft has been advanced 46 ft., with the object of undercutting the No. 1 south shoot on this level, and subsequently of developing the New Castletown vein. At a point about 35 ft. from the shaft, this crosscut entered milling ore, which is probably included in the Drumlummon lode. On the 1,000-ft. level the cross-lode passing through the Drumlummon, south of No. 1, has been developed some distance in its easterly course, but this work has been suspended, having proved unproductive. At an early date the No. 1 south shoot and the New Castletown veins will be sought for on this level. On the 1,600-ft. level the west crosscut is now advanced to a point 300 ft. distant from No. 1 shaft, and since passing through the Drumlummon lode has been driven entirely in country rock. This crosscut will be continued on the chance that the North Star lode may be persistent to this depth. The east crosscut has

reached a point 195 ft. from No. 1 shaft, and is now in the locality wherein the New Castletown lode should exist, providing the known dip of that lode at the 700 ft. level is maintained to this depth. It is not safe, however, to assume this to be the case, and it is possible that the New Castletown vein, if present at this depth, may yet be some considerable distance in advance of this crosscut. Mr. Bayliss says in the New Castletown lode on the No. 3 level a new discovery of promising importance has been made in a prospect drift run south from the middle, or main New Castletown ore body, at a point about 60 ft. over this level. This new ore body is now penetrated a distance of 52 ft., the first 22 ft. being low grade, averaging $8 gold and 6 oz. silver per ton; and the remaining 30 ft. being high grade, averaging fully $25 gold and 40 oz. silver per ton. The average width of this ore body is 9 ft. and the drift is still advancing in high-grade ore. On the 400-ft. level the south ore body has now been undercut for a length of 100 ft., and possibly extends some little distance further; the average width being about 8 ft. It is particularly difficult to place an average value upon this ore body, either on this level or the levels beneath, as the irregular occurrence of very high-grade ore renders accurate sampling impossible, but it may be safely assumed that the average value is $15 gold and 10 oz. silver per ton. On the 500-ft. level the south ore body is here undercut for a length of 160 ft., and also possibly extends still further south; the width is about 8 ft., and the grade of ore at present exposed somewhat higher than in the 400-ft. level. On the 600-ft. level the north drift has reached a point 40 ft. north of the junction of the New and Old Castletown veins, but has not, as was expected, encountered the body of pay ore found in the 500-ft. level at the junction of these two lodes. The face of the drift now shows 14 ft. of quartz of favorable appearance, and it is possible the ore body worked above may still be to the north of the present workings; if not, it has probably been intersected by this drift at a barren point, as was the case with the middle ore body in this level, and will be proved, should this alternative alone remain, by an upraise. The south ore body on this level has been undercut for 110 ft., and the drift is still advancing in ore. The width is not determined and the value is uncertain, but from daily samples should be estimated as of somewhat lower grade than in the 500-ft. level. On the 700-ft. level, going south, and about 80 ft. north of the probable position of the south ore body, the New Castletown and Drumlummon lodes appear to unite, making an ore body at present about 20 ft. wide, averaging roughly $10 per ton. As this ore body is a very recent discovery, it is not possible to express definite opinions of its importance. This drift will be continued south to undercut the south ore body. On the 800-ft. level an upraise has been made to connect this level with the 700-ft. level, but, with this exception, has not been developed during the past two months. It is gratifying to note that all the stopes now being worked on the New Castletown lode, are showing a considerable improvement in grade, and exceeding the estimates first placed upon their average value per ton. The New Castletown vein is an intricate structure, and is rendered still more complicated by reason of its proximity to the Drumlummon and other veins. Its thorough development will be a matter of time, but if it should be attended in the future with results as satisfactory as those secured during the past twelve months, the expenditure upon this work will prove a very profitable investment. In conclusion Mr. Bayliss says that further development work upon the Empire lode is now being commenced on the 400-ft. level at a point which presents very favorable indications, and will probably yield satisfactory results.

Silver Bow County.

Anaconda Mining Company.—A meeting of the stockholders of this company was held December 31st, in Butte, for the purpose of considering and determining the question of extending the term of the existence of the company. All the stockholders were represented in person or by proxy, the shares represented being as follows: Fleming Bremner, trustee, by Marcus Daly, proxy, 475,992; Marcus Daly, in person, 1; W. W. Dixon, in person, 1; J. B. Haggin, by Marcus Daly, proxy, 192,002; J. B. Haggin, trustee, by Marcus Daly, proxy, 20,000; Mrs. Phoebe A. Hearst, by W. W. Dixon, proxy, 299,000; W. R. Hearst, by W. W. Dixon, proxy, 1; William Keyser, president, by W. W. Dixon, proxy, 12,000; R. P. Lounsbery, by F. E. Sargeant, 1; H. B. Parsons, by F. E. Sargeant, 1; F. E. Sargeant, in person, 1; Irwin C. Stump, by F. E. Sargeant, proxy, 1,000. This makes in all 1,000,000 shares of the capital stock of the Anaconda. W. W. Dixon, one of the trustees acted as chairman, and Francis E. Sargeant as secretary. The following resolution was offered by Marcus Daly and seconded by F. E. Sargeant: Resolved, That the term of the existence of the Anaconda company be extended for such time as will make the term of existence 40 years from the date of the original incorporation, January 19th, 1891. The resolution was unanimously adopted.

Boston & Montana Consolidated Copper and Silver Mining Company.—The New England Trust Company, of Boston, Mass., trustee for the sinking fund, gives notice that it will receive proposals to sell Boston & Montana 7% 1898 bonds until January 22d at not above 110 and accrued interest, sufficient to absorb the sum of $99,308.97, or any part thereof, in accordance with the mortgage dated August 23d, 1887. Interest on accepted bonds will cease on January 23d.

Parrot Mining Company.—It has been definitely decided that this company will remove its smelting plant from Butte to Jefferson County. For some time the company has had its representatives out in various portions of the State adjacent to Butte seeking a location which offered the best natural advantages for the erection of a smelter, says the Butte "Inter-Mountain." Last summer the company decided upon Point-of-Rocks, about 14 miles from Whitehall, on the Jefferson River, and surveyors began work. Before the company had secured all the land needed a number of men got wind of the proposed construction of a smelter in that vicinity, and secured property completely surrounding the proposed location. They asked fancy prices for the ground, believing that the Parrot company had to have it. The company then gave it out that they had decided to remain in Butte. The ranchers around Point-of-Rocks were then willing to sell at a reasonable figure, and the company soon secured 7,000 acres. A branch railroad will be constructed from the Northern Pacific, and the ore from the company's mines will be hauled by rail. The contemplated removal is believed to be necessary owing to the difficulty the company experienced recently in securing a supply of water necessary to operate the concentrating plant. Extensive improvements were contemplated in the concentrator next spring which would tax the present supply to its full capacity. The water now used in concentrating is used for a similar purpose by both the Butte & Boston and Liquidator concentrators, and when it reaches the Parrot it is impregnated with so much matter that it is scarcely fit for the purpose. Another reason is that the dumping ground for slag in the immediate vicinity of the smelter is pretty well exhausted, and recently the only place for dumping the slag was such a long distance away from the furnaces that double the usual number of men had to be employed to keep the furnaces clear.

MISSOURI.

Jasper County.

(From our Special Correspondent.)

Joplin, Jan. 6.

The first week of the new year in this zinc and lead-mining district opened under favorable conditions, the sales of ore being almost double that of the last week in the old year. The prices paid for zinc ore were from $16@18.50 per ton, which price was fully up to the present price of the metal in the St. Louis market. The price of lead ore was strong at $16 per thousand delivered in Joplin. A number of the large companies have held their annual meeting and made their yearly statement, which shows a balance in favor of the operators, while not as large as preceding years, it makes a good showing for the demoralized condition in which the metal market has been particularly during the last half of the year. The operators and producers of zinc ore have now come to a realization of the fact that they, as producers of the crude ore, must lend their assistance to help increase the demand and uses of zinc if they would increase the value of the ore. We do not say that there is an over-production of the crude zinc ore, but we do say that this year will show an over-production, and prices still go lower if the uses of metal are not extended. A few men have been setting forth the great merits of zinc for roofing purposes, and one roof has been put on a public school building at Webb City. The beauty of the work has attracted much attention, and we understand that a company has been organized to manufacture zinc shingles at Nevada, Mo.

The European statistics of the amount of metal used in the manufacture of zinc shingles is sufficient evidence of what can be done here. Following are the sales of ore from the different camps for the past week: Joplin, 1,287,230 lbs. of zinc ore and 344,390 lead, value $15,736; Webb City, 1,132,670 lbs. of zinc ore and 59,220 lead, value $10,560; Carterville, 1 048,280 lbs. of zinc ore and 88,190 lead, value $10,272; Oronogo, 61,870 lbs. of lead ore, value $961; Belville, 31,670 lbs. of lead ore, value $506; Galena, Kans., 701,960 lbs. of zinc ore and 61,870 lead, value $7,470; district's total value, $45,505. Newton County, 276,690 lbs. of zinc ore and 63,570 lead, value $3,369; Aurora, 504,000 lbs. of zinc ore and 55,000 lead, value $5,691; lead and zinc belt's total value $54,475.

The first week of the new year was marked by two very important sales of mining property in this district. The first was the sale of the noted Grant Ashcroft land, five miles due east of Joplin. This tract of land contains 70 acres, and has been developed within the past four months. Mr. Ashcroft is said to have purchased this farm last summer for $3,000, and after prospecting with a drill he sunk a shaft and opened up a very extensive deposit of lead, from which he mined over 150 tons of lead in developing the deposit. The sale was made to parties in Mansfield, O., Terre Haute, Ind., and Allen Hardy, of Webb City. The amount paid for the fee-simple of the 70 acres is reported at $40,000. The next sale was the 40-acre lease known as the F. M. Sharp mines on the Rex M. & S. Companies' land. This has been a most noted producer of both lead and zinc ore during the past two years, and there are large reserves of ore blocked out and in sight. The property is equipped with one of the best ore-dressing concentrating plants in this district. The purchase was made by McAldrich, who has been very successful at mining in Galena, Kansas. We are unable to give the exact price paid, but think the deal was consumated at not less than $10,000.

NEVADA.

Storey County—Comstock Lode.

Ophir Mining Company.—The annual report of D. B. Lyman, superintendent of this company, submitted at the stockholders' meeting, contained the following about the more important explorations in the old Central tunnel workings of the mine: "From the end of the main west crosscut from the north drift from the Mexican shaft (56 ft. above the tunnel level) two upraises were carried up, one 24 ft. and the other 41 ft., one above the other and separated some distance apart by a north drift, making the total height reached 117 ft. above the tunnel level. From these upraises prospecting drifts have been and are being run in different directions. Although nothing of importance has been developed so far, we are not without hope and expectation that ore will yet be found in this part of the mine. . . . The Central tunnel, where it connects with the Mexican shaft, is 150 ft. below the surface. The winze through which we are operating at present having been reopened down to a depth of 100 ft. below the tunnel level, the bottom of the winze, which is the point from which we are carrying on prospecting work is by actual measurement 250 ft below the surface, and is designated as our 250-ft. level. The old south drift from the station on this level has been reopened a distance of 78 ft., and has been extended beyond in new ground 146 ft., passing through porphyry and quartz for the first half of that distance, which gave assay values of from $2 to $10 per ton. The total length of this south drift is 224 ft., and in its southerly course it makes a little westing, as the seams of quartz which we are following led us in that direction. From the end o this south drift a drift running southeasterly was advanced 143 ft., ending in a porphyry and quartz formation, assaying from $2 to $8 per ton The first 42 ft. of this southeast drift is in a porphyry formation, and onward from that point it passes through a quartz body for a distance of 38 ft., assaying from $1 to $3 per ton. At the 80-ft. point ore began to appear along the easterly side of the drift, and when the drift had been advanced 100 ft. the whole face of it was in ore which gave an average assay value of $75 per ton. The next 32 ft. showed an average width of 5 ft. of good ore. At a point in this southeast drift, 112 ft. in from its mouth, three squares of timbers, 15 ft. in length by 6 ft. in width, were placed, and from this point we have carried up an upraise of 21 ft. in ore, and from the top of the upraise we have worked out to the southwest, a distance of 6 ft. On the sill floor the ore was 5 ft. wide and in the top (21 ft. up) it shows a width of 2 ft., assaying $25 per ton. From top to bottom the ore extracted from the stopes averaged from $25 to $50 per ton. Along the line and course of this drift, that is southeast and northeast, and parallel with it, there is a separation which cuts off the ore to the northeast. This clay was not in sight, nor did the drift cut into it, until we placed the square sets of timbers for the upraise. Upward along the line of the timbers the clay shows from top to bottom, and is undoubtedly the dividing line which separates the ore from the undeveloped ground to the northeast. The southeast and northwest faces of the stope openings are in ore averaging about $30 per ton. Judging from our upward stope openings, the indications for a continuation of the ore to the northwest are not so favorable as they appeared to be at the point where it was first cut in the drift.

The following are extracts from the latest weekly letters of the mine superintendents:

Belcher.—Repairs to the surface machinery are completed and work in that mine and the Seg Belcher will be resumed on January 2d.

Best & Belcher and Gould & Curry.—The joint incline winze below the 200-ft. level of these mines is down 70 ft., passing through hard porphyry and quartz.

Challenge Consolidated and Confidence.—Exploratory work has been resumed in the adit tunnel, and crosscut No. 2 has been advanced 26 ft. from the north lateral drift, the face showing porphyry and clay. This work is being advanced in a region which in the early history of the mine proved prolific in high-grade ore.

Chollar.—The winze on the 450 level, 350 ft. south of the north line is down 42 ft.; bottom in fair grade ore. We are stoping ore from the north end between the 450 and 550 levels. During the past week we have shipped to the Nevada mill for reduction 249 tons and 100 lbs. of ore, the average battery assays of which were $31.25.

Consolidated California & Virginia.—In the 1600 ft. level we have continued to stope ore from the new ore body above and below the sill floor of this level, from the 6th floor up to the 11th floor, and on the 11th floor have opened out two more sets of timbers to the south in good ore, making 10 sets in all from north to south. From the south face, on the 11th floor, in the southwest corner, we have opened out 3 sets of timbers upward. The 12th floor carries 5 ft. of good ore lying against the west or footwall, and the south face on this floor is in ore of good quality. 1700 ft. level.—In working upward from the sill floor of this level and outward to the north and south, we have continued to extract good ore. 1750 ft. level.—From the sill floor of this level on the north side of the winze, sunk from the 1700 ft. level. Our

stopping in the ore body has been carried up to the 5th floor, and from the 2d to the 5th floor we have extracted 130 tons of ore, assaying on the average of $24.74 per ton. From all of these openings we have extracted during the week 300 tons of ore, the average value of which per mine car samples was $54.74 per ton. Shipped to the Morgan mill 340 tons and 860 lbs. of ore, the average value of which per railroad car samples was $50.85 per ton. The average assay value per battery sample of all the ore worked at that mill during the week—175 tons—was $49.67 per ton.

Crown Point.—We have extracted from the various levels 588 tons, 580 lbs. of ore during the week, which has been shipped to the Mexican mill for reduction. The average battery assay was $9.27 per ton, of which $8.68 per ton was gold. Underground work was temporarily suspended December 25th, pending repairs to the steam hoist plant, which will be completed and the extraction of ore resumed on January 2d.

Hale & Norcross.—The streak of ore in the face of the north drift on the 975 level is still holding out, and is of good quality. During the week three carloads of ore assaying $50.33 per ton were extracted.

Ophir.—In the 1,465 level workings some ore giving low assays is still being found. In the central tunnel workings on the 250 level a winze is being sunk at a point 80 ft. in from the mouth of the southeast drift. It was down on December 29th 7 ft., and 17 tons of ore assaying $21.52 per ton had been extracted from it during the week. Porphyry carrying fine lines of quartz is being cut in the northwesterly workings 117 ft. above the tunnel level.

Potosi.—The connection at the bottom of the south winze from the 450 level is completed, and we are running south on a streak of fair-grade ore.

NEW MEXICO.

Santa Fe County.

Wallace.—The Sante Fe Railroad Company, operating the several coal mines near Cerrillos, closed down the Wallace mine recently, and has now shut down work at the anthracite coal mine, throwing out of employment 100 men. It is learned that the company will close down other mines and discharge all men employed, except those that are married.

Taos County.

Golden Jack Mining, Milling and Development Company.—This company has been formed by Trinidad, Colo., parties, to work a group of 10 claims in the Costilla district. Work will be pushed on the best two claims and a stamp mill will be erected if developments warrant it.

OHIO.

Stark County.

The miners of the Massillon district, numbering 8,000 men, represented by delegates in convention on January 7th, decided to return to work on the next day at the 60c. rate made by an arbitration board. The majority of the men in the district have been out since the inauguration of the national coal strike in April of last year. They wanted 70c. a ton.

OREGON.

Baker County.

White Swan.—A new ore vein was struck last week west in the 150 ft. level, and from a vein of 3 or 4 in. it has increased in width until at present it is about 4 ft. wide, 4 in. of it showing free gold to the eye, according to the Baker City "Democrat."

Union County.

Oregon Gold Mining Company.—This company has brought suits at Louisville, Ky., where its main office is located, against A. L. Schmidt and George H. Dietz respectively. It is alleged that between 1885 and 1893 A. L. Schmidt was treasurer of the company, and as such and as an individual received funds belonging to the company amounting to a very large sum, stated to be over $500,000. It is alleged that Schmidt has often been requested by the plaintiff to settle his accounts and pay over the balance due. Part, it is alleged, has been paid but, it is declared, there remains a balance due of $22,297 at least. The plaintiff believes that the defendant has converted this sum to his own use. Judgment against Schmidt for the sum named is asked.

In the petition against Dietz it is alleged that between the years 1888 and 1893, inclusive, the defendant was president of the Oregon Gold Mining Company. As such, it is alleged, he received and collected money belonging to the plaintiff aggregating about $5,979, which, it is claimed, he has never accounted for, although a settlement has been asked. Dietz, it is said, ceased to be president in 1893, and the demand has been made since then. It is alleged that the money has been misappropriated, and judgment for it is asked. These suits are the firstfruits of the famous case of John Mitchell and others against the Oregon Gold Mining Company and A. L. Schmidt and George H. Dietz, which is now pending on appeal in the Court of Appeals.

The report of Receiver Charles Meriwether showed the Oregon Gold Mining Company to be in a deplorable condition, and he made charges of mismanagement.

PENNSYLVANIA.

Anthracite Coal.

The Schuylkill Coal Exchange announces that the following collieries drawn to return prices of coal sold in December, 1894, to determine the rate of wages to be paid, make the following returns: North Mahanoy Colliery, $2.27; Hammond Colliery, $2.20; Indian Ridge Colliery, $2.20; Furnace Colliery, $2.17; Otto White Ash Colliery, $2.17. The average of these prices is $2.20, and the rate of wages to be paid for last half of December, 1894, and the first half of January, 1895, is 10% below the $2.50 basis.

Lehigh Valley Railroad.—The report of this company for the year ending November 30th, 1894, has just been issued. The following comparative statement is made:

	1894.	1893.	Changes.
Anthracite tonnage ..	11,103,157	11,477,630	D. 374,473
Merchandise freight ..	4,690,885	4,951,782	D. 260,897
Total tonnage..	16,121,549	16,775,242	D. 653,693
Rate on coal per mile .	·732c.	·823c.	D. ·091c.
Merch. rate per mile .	·565c.	·618c.	D. ·053c

The receipts from coal were $8,391,541, as against $9,225,027 in 1893, a decrease of $833,485. The gross receipts from all sources were $17,497,140. The operating expenses, $13,320,829.

The floating debt was reduced $677,000 in the year, to $3,200,000, and since November 30th it has been reduced $325,000 more. The company has some $13,870,154 securities to meet this debt, not counting current assets. The company is still negotiating a settlement of disputed accounts with Reading. The loss by the strike in November, 1893, was over $1,000,000. Of the coal hauled, 2,321,390 tons was for other companies. The Lehigh Valley Coal Company earned a surplus of $62,274. The average decline in the price of coal in New York in 894 was over 70c. per ton, the average price all sizes being in November, 1893, $4 per ton and in November, 1894, $3.29 per ton. The losses on sales of coal were $8,839 on all coal handled. The company made $357,337 on its own coal and lost $366,176 on coal bought from others and resold.

The Lehigh Valley balance sheet shows a decrease of $210 in stock and $2,000 in funded debt, a decrease of $670,000 in bills payable, decrease $624,342 in mortgages on real estate, and $111,372 in tax accounts. There is an item in 1894 of "Philadelphia & Reading R. R. Co. lessees' construction account $949,743" not in 1893.

In the assets the cash assets are $1,978,568, against $1,394,802 last year. The greatest item of all is Philadelphia & Reading R. R. Company lessees $3,258,723, against $1,295,716 in 1893, an increase of $1,963,006. The charges to capital account for the year were $937,364 for improvements and $1,337,356 to advances to leased companies. The report is very full and elaborate.

Richardson Colliery.—In this colliery at Glen Carbon a large mass of coal fell on Janury 8th, imprisoning two men. It is feared that one of them is killed. A large rescuing force is at work trying to dig them out.

Bituminous Coal.

The strike situation about Dubois remains unchanged. At a meeting of miners and citizens held in Dubois on January 7th, Opera House this morning, a committee was appointed to draft resolutions asking the company to reinstate the men discharged last week. At Reynoldsville, where a few Italians were working, all the mines are now idle. The night operators and yardmen on the Buffalo, Rochester & Pittsburg road, which carries all the coal from the region, have been laid off on account of the strike.

UTAH.

Juab County.

Bullion-Beck & Champion Mining Company.—The machinery for the new concentrator of this company is slowly arriving on the ground. The pipe for the pipe line to be put in from the top of the divide between the mill and Homansville has all been delivered, and the construction of the system is to commence in a short time. About two miles of 5-in. pipe will be laid. Good progress is being made with the construction of the mill building. Alexander Badlam, of San Francisco, representative of a considerable block of the company's stock, made a visit of inspection to the mines recently. Before returning to San Francisco he served notice upon the members of the board of directors that in the event of their voting for the purchase by the company of the Caroline, claimed by John Beck and the company, they would be held personally responsible for any loss sustained by the company by reason of that loss, says the Salt Lake "Herald." Badlam holds that the company owns the Caroline, and should, therefore, not make a payment to Beck on the property, the title to which is still in the courts. The matter is now before the board of directors, and efforts are being made to secure a settlement by the purchase of the mine by the Bullion-Beck. There the case rests at present.

Millard County.

Ibex.—All of the preliminaries are now being made for the blowing in of the new smelter of the Ibex syndicate, at Leamington, and within a week the plant should be in operation. Ore is being regularly delivered at the works from the Detroit district mines and also from Tintic, and the supply on hand is approaching 1,000 tons. All of it is high-grade rock, that from the Ibex and the Charmed running well in gold. In addition to the ores the smelter will treat some of the concentrates from the mill of the Horn Silver at Frisco.

Ibex Group.—Another payment of $27,500 on the purchase price of the Ibex properties in the Detroit Mining district was made on January 2d. Recent assays of the ore taken from the drifts now being run in the Ibex give returns of from $10 to $50 in gold, a high per cent. of copper and some silver, says the Salt Lake "Herald." Regular shipments are being made from the mines to the Leamington smelter, which will be ready for operation in the very near future. Manager John Williams has gone to the mines to make the final inspections.

Salt Lake County.

Shipments of ore and bullion from Salt Lake City during the week ending January 2d amounted to 647,441 lbs. of bullion, 979,790 lbs. of silver and lead ores, and 105,550 lbs. of copper matte.

Stewart Mining Company.—The bond on the Stewart group at Bingham, which has been held by a party of Colorado capitalists, expired on December 31st. The failure of the sale, it is reported, is not unsatisfactory to the local people on account of the favorable character of recent developments. It it reported that a mill will be erected on the Highland Boy, one of the properties in the group.

Summit County.

Daly Mining Company.—This company's bullion shipments during the week ending December 29th amounted to 11,354 oz. of fine silver.

Ontario Mining Company.—This company shipped during the week ending December 29th, 23,727 oz. of fine silver.

Tooele County.

Cannon Gold Mining and Milling Company.—The sale of the treasury stock of this company having been sufficiently heavy to place a considerable sum in the hands of the treasurer for development purposes, the executive officers of the company have decided to at once resume operations on the properties of the company in the Camp Floyd district. A force of men will be put on the Index, and the shaft, which is now down 59 ft., is to be sunk 400 ft. if necessary before the main vein is encountered. The property is 500 ft. from the Ruby, the property of the Mercur Company, in which the recent rich strikes were made.

Gold Mine.—The owners of this group of mines in the Mercur district have let a contract for 100 ft. of crosscut tunnel to open up their property. As soon as the vein is encountered general development work, looking to the ultimate erection of a cyanide mill, will be begun. The owners of the property are Messrs. H. T. Bragden, Quincy Smythe, Carr and other Denver parties.

FOREIGN MINING NEWS.

BOLIVIA.

Huanchaca Mining Company.—The board of directors at Valparaiso has decided to pay a dividend of 4s., or 5 fr. per share, being 4% on the par value. This dividend is No. 11, and became payable on December 31st.

BRITISH COLUMBIA.

Trail Creek District.—The Canadian Government has appointed customs inspector for the Northport and Sheep Creek wagon road into the Trail Creek mines. According to the Spokane "Spokesman-Review," this means that more mines hitherto undeveloped are going to ship ore, and that instead of hauling it 7 miles and shipping it 25 more by river, there will be a single 14-mile pull into Northport. Trail Creek is a promising camp. The principal working mines are the War Eagle, of which P. Clark is manager; the Le Roi, owned by Spokane business men; the Josie, held by F. C. Loring and others; the Center Star, owned by Oliver Durant, and the Nickel Plate, which was bought recently by Mr. Rhodes, of San Francisco, the price being said to be $10,000. The Center Star will be the scene of active operations when spring opens, arrangements having been made to put in a big plant. There are other claims of lower grade that will be materially affected by the creation of the new port of entry. A steamer is now making daily trips between Boundary City, Wash., and Trail Landing, bringing out ores hauled on sleds to that point from the Le Roi and War Eagle mines at Rossland. The Campbell-Payne placer mines, which are being vigorously worked, are creating quite an excitement, and a number of claims near by have been located lately. These mines are located 10 miles east of Boundary City. The Campbell-Payne Company has just completed a lease with the Canadian Government for 160 acres for a term of years. The first clean-up is said to have netted $4 per day of six hours to the man.

Yale District.

(From an Occasional Correspondent.)

Stemwinder.—This property on Fourth of July Creek was recently purchased by Butte parties, $8,000 being paid down and $9,000 in installments. The new owners propose to sink 100 ft. this winter and determine the character of these deposits. The Stemwinder makes a very fair showing of ore carrying 3½ to 5% of copper and $23 in gold at the bottom of the shaft. Mr. W. M. Courtis, mining engineer, of Detroit, was examining these claims in the interest of prominent Michigan men expecting the above sale would not be completed. The development is

mostly in open cuts or shallow pits, the shaft on the Stemwinder shaft being only 26 ft. deep. The mining outlook for all this section north of the N. S. boundary is very promising.

QUEBEC.

Phosphate King Mine.—This mine in the township of Templeton, operated by the Lake Girard Mica Mining System, has been opened this year with success. The main shaft worked in 1891-92 for mica has been sunk farther down to a depth of 65 ft. in a solid deposit of phosphate, measuring in the bottom of the shaft 8 ft. wide. Since April this year 650 tons of pure phosphate have been taken out and sold to a Montreal concern. Perfect mica crystals are frequently met with in the vein and yield a fine commercial product. It is the intention of the system to sink the shaft farther down and to test the vein body thoroughly. Twelve men are steadily employed. Prospecting work in the northern part of the property has resulted in finding different valuable outcrops. One of the recent discoveries shows a solid phosphate body measuring 20 ft. long and 4 ft. wide, and operations will continue here at once.

Wallingford.—This mine, in Templeton, continues to turn out large quantities of mica. The shaft is now about 100 ft. deep, and has been sunk entirely in a solid mica vein, which shows in the bottom of the shaft 9 ft. in width and is still increasing. A drift in about 70 ft. depth has laid bare the vein for 60 ft., and the latter is still continuous. Fifteen persons are employed. The bulk of the material cuts from 2 × 3 to 5 × 6 in. The mica is being sold in a trimmed state to a Boston concern and to Mr. Franchot, of Buckingham. The monthly output averaged 15 tons of trimmed mica sheets.

SOUTH AFRICA.

Transvaal.

The New Primrose mine, Witwatersrand, has its battery of 100 stamps crushing 11,000 tons a month, which, while less than an average during the first six months of the year, yielded more per ton than before. The new manager is pushing development, and during October made a record in shaft sinking. The South African "Mining Journal" gives the following account of the work done:

The rock was dumped at the head of the incline shaft, giving at the outset 250 ft. of hauling, the distance gradually increasing. The work was done by three white miners. During the first week, in 63½ hours, there were 7 blasts, 538 trucks hoisted, 6½ cases of dynamite used and 38 ft. sunk. In the second week, in 63 hours work, there were 7 blasts, 532 trucks hoisted, 6½ cases of dynamite used, 836 ft. sunk. The third week, 80½ hours, 9 blasts, 699 trucks hoisted, 8 cases of dynamite, and 43 ft. sunk. The fourth week, 71 hours, 8 blasts, 580 trucks hoisted, 12 cases of dynamite used and 34 ft. sunk, and the following three days showed 37 hours work, 4 blasts, 315 trucks hoisted, 7 cases of dynamite used and 14½ ft. sunk. The total time was 31 days: total hours, drilling and blasting, 315 hours, equal to 13 days 3 hours; number of blasts, 35, ranging from 23 to 28 holes of an average depth of 6 ft. Amount of rock broken: 2,631 trucks, which estimated at 15 cu. ft. per truck, or ¾ of a ton, equal to 1,975 tons; size of shaft, 17 × 6½ ft.; number of feet sunk, 165½ ft.; cost per foot, £5 4s. 7d. Ingersoll-Sergeant drills used.

Bonanza Mine.—An Ingersoll compressor for 10 drills has been put down on this ground, and in future sinking will proceed more rapidly. The distance made in October by hand labor was 60 ft., and the shaft is nearly 400 ft. deep. The South Reef will be struck at 550 ft., so that within three months the work of development can be undertaken.

LATE NEWS.

Mr. D. J. Nelson has been appointed superintendent of the Pittsburg & Tennessee Copper Company, succeeding Mr. Carl Henrich. His address is at Ducktown, Polk County, Tennessee.

The stockholders of the Pueblo Smelting and Refining Company have voted to reduce the capital stock from 12,000 shares of $100 par value to 6,000 shares of the same value.

Gold shipments from British Guiana for the 11 months ending November 30th, amounted to 114,715 oz., valued at $2,044,683. The valuation would make the gold about ·860 fine, so that the output reported was equivalent to 98,655 fine oz. gold.

Mr. Edward C. Potter, formerly with the Illinois Steel Company, has accepted a position offered by the Japanese Government to take charge of extensive industrial developments in iron and steel in that country.

A press dispatch from Nova Scotio gives the coal output of that province during 1894 at 2,055,114 tons, an increase of 86,500 tons over 1893. Of this total 1,170,000 tons were from the Cape Breton mines. While the Cape Breton mines show an increase of 132,320 tons, the Pictou and Cumberland colleries show a decrease of 50,000 tons. The exports to the United States exceeded 120,000 tons, an increase of 100,000 over the previous year.

Our special corespondent writes from the Eureka district, in Nevada County, Cal., that the snowfall during December in the Eureka district has beaten all previous records for that month, being about 163 in. Snowslides have been of frequent occurrence and very destructive, causing the death of two men at the English Mountain mine. The North Bloomfield, Eureka and other large water ditches are banked solid with snow, cutting off entirely the water supply of the district. The English Mountain, the National, the Culberson, the Rocky Glen, the California and the Baltic mills are closed down, and work has been suspended on all the mines for the winter except the tunnel work on the Erie; this has been driven 423 ft., cutting nine veins in that length, one of them being large, with about 6 ft. of ore on the hanging wall.

Cripple Creek, Colorado.

(From our Special Correspondent.)

The Elkton Mining Company, on Raven Hill, employs 56 men. It was the intention of the company to resume sinking January 1st, as stated in a previous letter, but the sinking has been postponed until February 1st. The output for December was 11 cars, somewhat smaller tonnage than for November consequent on a pinch in the vein. The lowgrade dump was increased by 1,100 tons. The south drift at the second level is 145 ft., and has been idle for three weeks. The north drift is 265 ft., and is being pushed ahead with all speed. At the first level this company took a contract from the Nugget Company to extend the level right through the Catherine claim, owned by the Nugget Company, for a distance of 176 ft. to the Walter claim, owned by the Elkton Company, and it is anticipated that the Walter ground will be reached January 12th, and from the present appearance of the drift it is expected that the vein will open up into a splendid shoot of ore. Stoping is being done on the second level.

Victor.—The output for the month of December was 140 tons of first and second grade ore. The first grade sampled 57½ oz. of gold, the second grade from 14 to 19 oz., and about 500 tons of fourth grade was sent to the United States Economic Reduction Works at Florence. One-fifth load was sampled at the Cripple Creek sampler, and assayed from $25 to $30 per ton. The mine now employs 92 men.

COAL TRADE REVIEW.

NEW YORK, Friday Evening, Jan. 11.

Statement of shipments of anthracite coal (approximated) for week ending January 5th, 1895, compared with the corresponding period last year:

Regions:	Jan. 5, 1895. Tons.	Jan. 6, 1894. Tons.	Difference.
Wyoming region	308,117	312,638	Dec. 4,521
Lehigh region	86,931	90,487	Dec. 3,557
Schuylkill region	150,627	158,743	Dec. 8,116
Totals	545,674	561,868	Dec. 16,194

PRODUCTION OF BITUMINOUS COAL, in tons of 2,240 lbs., for week ending January 5th and year from January 1st:

Shipped East and North:	1894. Week.	1894. Year.	1893. Year.
Phila. & Erie R. R.	1,601	1,601	704
Cumberland, Md.	35,928	35,928	50,817
Barclay, Pa.	†	†	430
Broad Top, Pa.	5,725	5,725	6,767
Clearfield, Pa.	70,761	70,761	69,855
Allegheny, Pa.	31,357	31,357	24,548
Beech Creek, Pa.	58,470	58,470	38,725
Pocahontas Flat Top.	38,715	38,715	46,721
Kanawha, W. Va.	65,250	65,250	56,829
Totals	277,807	277,807	286,396

† Returns not received.

Shipped West:	1894. Week.	1894. Year.	1893. Year.
Pittsburg, Pa.	38,257	38,257	28,445
Westmoreland, Pa.	32,461	32,461	23,496
Monongahela, Pa.	10,912	10,912	5,571
Totals	81,630	81,630	57,512
Grand totals.	259,437	259,437	343,908

Production of coke on line of Pennsylvania Railroad for the week ending January 5th, 1895, and year from January 1st, in tons of 2,000 lbs: Week, 121,916 tons; year five days, 96,181; to corresponding date in 1893, 57,365 tons.

Anthracite.

No change has occurred in the anthracite coal market since our last report. The trade is exceedingly dull just now and whatever coal is moving consists of deliveries on old orders placed before the present circular went into effect. The cold spell did not last as long as was hoped by producers and it had little or no effect on the wholesale business. retailers report that they have moved a fair amount of coal during the past three weeks, though not enough to deplete seriously stocks in their yards. With another spell of sharp weather many would be forced to come into the market. Even now some are on the market for coal, but they have not placed their orders because they regard a decline in prices as probable or, at least, possible. The result of their inquiries cannot have been very encouraging, for prices to-day are certainly being held more firmly than for the past eight months. Of the companies none is selling below the circular, and it is only fair to quote $3.60 for stove; $3 45 for egg and chestnut, and $3.35 for broken, all net on board, as the ruling prices. We have heard of some sales by individual operators and middlemen at lower figures, but we find on investigation that the principal instance was of a lot of stock coal which the seller would have been glad to dispose of at almost any price. The circular, taking it all in all, fairly represents the market.

A number of rumors have been circulated concerning the probable plans or scheme to be suggested by the committee consisting of Messrs. Henderson, Sayre and Torrey at the forthcoming meeting of the representatives of coal transportation lines. All statements about the matter are premature. We have it on good authority that no plan has been agreed upon as yet. Just now there seems to be an epidemic of good sense raging among producers. The market, though dull, is firm. Everybody is restricting and shipments during the week ending January 5th amounted to only 545,674 tons. Producers are apparently in the proper mood for adopting and maintaining any sensible, practicable scheme. We are loath to believe that this may prove to be only the calm that precedes a storm. The Pennsylvania Railroad Company has had a representative at the last two meetings, and Mr. Roberts, we understand, shows more disposition to be governed by the actions of his competitors, although his company's attitude may continue independent. The Pennsylvania is acting much like the other companies in the matter of restriction and prices just now.

Bituminous.

The soft coal market has not improved since our last week's report. There has perhaps been slightly more urgency for the shipment of the few orders in hand, but this has been caused by the closing up, practically, of one of the shipping ports by ice and of quite some little trouble at the other ports from the same cause. A few of the dealers in the East have commenced taking on a little coal again, but it does not amount to very much. The same delay in taking on coal for regular consumption is still marking the trade as it has for the last few weeks, but the consumption in the regular course of business is using up the coal and forcing consumers to replenish their depleted stocks. We anticipate that this will cause a slightly improved demand shortly.

The Baltimore & Ohio Railroad has given its usual notice of withdrawal of through rates from mines to tide. It is stated that this is not an intimation of any changes in the new rate on March 1st, but there are rumors in the trade that some cutting will be done in through rates during the coming season. Some consumers talk as if lower prices for coal would be made. It is probably based upon these rumors of a cut in freight rates, for producers declare that the margin of profit in soft coal is so small that there is no room for cutting in the mine price. A few of the companies have paid fair dividends in the last year, though most of them have had to reduce, and others have passed entirely.

There has been some talk of labor troubles for the coming year. The labor organizations have now a better hold on the regions than before last year's strike. It was thought at the time the latter ended that it would stop all trouble for the next year or two, but apparently it is not so. A strike is now reported in the Dubois and Reynoldsville districts in Pennsylvania which may become serious. The last strike disgusted many of the proprietary interests, who, on account of the long service of the men in their employ, had paid more than they otherwise would, and it is thought that this time they are in no mood to temporize with the agitators. Indeed, it is known that at least two of the older conservative producers on the Atlantic seaboard have been contemplating the introduction of machinery into their mines. This, of course, would reduce the number of men employed.

All-rail trade is fairly active, and apparently this branch of the market has held its own better than the trade at tide. In the transportation of coal to tide there has been only a slight delay which is accounted for by the recent bad weather. The car supply is good, all shippers receiving the cars that they apply for at the mines. The coastwise ocean trade is in a peculiar condition. At Philadelphia where it is usually easy to ship from, and the rates are less than at the lower ports, there is much difficulty in getting vessels. At this writing we hear of the following rates from Philadelphia: 87½c. to one of the Sound ports, 90c. being offered for Boston without takers, though barges of 2,000 tons and over could be had at this rate; and 95c. has been paid for a large 2,500-ton barge to Portland. At the lower ports, Baltimore, Norfolk and Newport News, where the ice is not so bad, rates are quoted at 85c. to Boston, Portland and Salem, and 75c. to Providence, New Bedford, New Haven, Bridgeport and other Sound ports. The barges do not have as much trouble with the ice as the sailing vessels.

Buffalo. Jan. 11.

(From our Special Correspondent.)

The few days of cold weather, at one time thermometer down to 4° above zero, caused the anthracite coal trade to become more active. Since the atmosphere has been comparatively warm and humid, and the ice has changed to slush, the snow to rain, and wheels have taken the place of runners, the business now shows but little push or life.

The bituminous coal trade continues dull and quotations continue nominal. The consumer has his own way in regard to prices in view of the strong competition and the fear of troubles from the restless delvers in the mines does not count in the deal.

Coke in fair demand with but few, if any, indications of advance in prices.

Lake Erie, the Niagara River and the water in our harbor have a coat of ice on them, but of what thickness your correspondent knoweth not.

Crude oil for fuel purposes is going into increased consumption in this locality. It is a favorite with all who have tried it, on account of cleanliness and cheapness.

In consequence of the strike at Dubois and Reynoldsville and the discharge of 400 employees, there is little coal to be transported by rail, and the result is that the yardmen of the Buffalo, Rochester & Pittsburg Railroad have been laid off for the time being. A dispatch from Dubois on January 7th says: It is learned here that the miners who are out on strike held a secret meeting at Reynoldsville. It is understood that a call was issued for a general meeting of miners and citizens, to be held to-day, at which the strikers will publicly define their grievances and ask for aid and sympathy from the public. Some 1,500 men are out, the apparent cause of the strike being the discharge of 400 men from the Bell, Lewis & Yates mines last week. The miners of this region only resumed work in June after a protracted and fruitless struggle of several months' duration, and it is believed that the present movement is but the beginning of a bitter fight between capital and labor in this district. The miners say they believe the company is trying to disrupt their union and that they will fight until starvation again compels them to submit.

The result of the election of the Merchants' Exchange yesterday was that Mr. John M. Brinker, the well known coal merchant and mine-owner, is now a trustee for three years.

Chicago. Jan. 9.

(From our Special Correspondent.)

The coal business of Chicago has been considerably stimulated by the cold weather. The thermometer since my last report has persisted in hugging the zero notch, and naturally people bought coal, and bought more of it than they have done in any week for a long time past. Some dealers declare that their sales have amounted to 100% more this week than last, while the majority think that 50 to 75% is about the gain. It cannot be said that those who are buying coal at the present time are laying in any large supply, for the sales show that the hand-to-mouth policy yet prevails. While the sales have been large in the aggregate the average of each is much below those of a year in which the financial conditions are better. The sale of bituminous coal has increased considerably through the week, the cold weather being a factor in enlarging sales, the many large office buildings, hotels, etc., having bought more freely. The amount of soft coal bought by manufacturing concerns has apparently been no more than usual, but this fact may not be reckoned: that the manufacturers are doing a decreased business, for a great many of them are busy at this season each year taking inventories of stock. The out-of-town business has been large in both anthracite and bituminous coal, and prospects are good for a continuation. Prices are no nearer the circular rates than they have been for a long time past, and there is absolutely no indication that they will be.

The demand for coke is excellent, and a good business is being transacted in that article right along.

Circular rates on anthracite coal are: Grate, $5.00; egg, stove and chestnut $5.25. For bituminous prices are, f. o. b. Chicago: Youghiogheny, $3.15; Raymond, $3.50; Shawnee, $2.50; Blossburg, $3.90; New Kentucky, $2.75; Hocking, $2.90; Brazil Block, $2.15; Birdseye Cannel, $5.25; Green Ridge, $1.75; Wilmington, at mine, $1.50; Streator, at mine, $1.40; Du Quoin, at mine, $1.05.

Connellsville foundry coke is selling for $3.90; Connellsville coke crushed, $4.15; Pocahontas, $3.85; New River, $3.85@$4.

Pittsburg. Jan. 10.

(From our Special Correspondent.)

Coal.—The Ohio River the past three days has been on a "high" with fully 26 ft. of water in the channel; this being too high for navigable purposes boats have to wait for a decline. It will soon be at a boating stage. There is plenty of coal loaded and as towboats are numerous the run will be a good-sized one. There is more coal ready than can be sent out on this rise. Most of the river mines in the pools are running full; on the other hand the railroad mines are lying practically idle with no immediate prospect of resumption. There is no use talking about it, every one is well aware that the coal trade is in a demoralized state, the cutting down of wages will precipitate a strike, but there's no way out. These are the words of a coal operator whose exact understanding of the situation is not to be disputed, and they echo completely the opinion voiced by the president of the Miners' Union a few days ago. When dealers on both sides agree that there is no hope of agreement and fair dealing, and that, therefore, a strike cannot be avoided, the public know what to expect.

Connellsville Coke.—The coke trade is picking up in the Dunbar region, is brighter at present than at any time since the strike. The Cambria Iron Company, of Johnstown, has every plant in full operation, and the local operators report orders on the increase for more coke.

The Pritschdale Coal and Coke Company has been chartered, capital $50,000. Prospects for a big coke run are good, orders have been largely increased and a great many ovens have been fired up. The increased orders seem to mean that the furnacemen fear a strike and do not propose to be caught without plenty of coke on hand. Summary for the week shows 14,433 ovens in blast, leaving 3,381 idle. The estimated production was 107,203 tons; previous week, 147,628 tons; decrease, 40,425 tons. Only five of the 85 plants made five days, the balance making four. The shipments were as follows: To Pittsburg and river points, 1,774 cars, a decrease of 879 cars; to points west, 2,863 cars; decrease, 1,000 cars; to points east, 795 cars; decrease, 656 cars; total, 5,432 cars against 8,062 cars the preceding week. Prices are nominal: Furnace, $1; foundry, $1.15; crushed, $1.40.

IRON MARKET REVIEW.

NEW YORK, Friday Evening, Jan. 11, 1895.

Pig Iron Production and Furnaces in Blast.

Fuel used.	Week ending Jan. 12, 1894. F'ces.	Tons.	Week ending Jan. 11, 1895. F'ces.	Tons.	From Jan.,'94 Tons.	From Jan.,'95. Tons.
Anthracite.	29	14,192	38	21,632	28,384	43,264
Coke.....	81	82,967	124	145,123	165,934	290,246
Charcoal...	20	3,884	23	5,140	7,768	10,280
Totals....	130	101,043	185	171,895	202,086	343,790

As shown by the letters received from our correspondents the iron and steel trade is just beginning to show an improvement over the customary three weeks of dullness about the holidays. While there is as yet no marked changed in any line, there seems to be in every quarter a stronger tone, and with it a feeling that the bright outlook for spring is likely to be realized. The only ominous feature in the trade is the possibility of a serious strike in the coal regions. The miners maintain an ugly tone, and as they have been endeavoring to perfect their organization, a strike, if once started, would have a widespread effect. In the present condition of trade, that is, recovering from depression of trade, such a catastrophe would cause a vast amount of damage, and while it would unquestionably react upon the strikers in a manner which they never anticipate that would not compensate for the set-back to our industrial development.

As shown by our figures of weekly production, we begin the year with a full complement of furnaces in blast, and an output which, if maintained at its present rate, will give over 9,000,000 tons in 1895, as against 6,450,000 tons in 1894. Our stocks have increased slightly, but are not above four weeks' supply.

Considered in its relation to the business of the country there is every reason to believe that, apart from the possibility of strikes, the condition of the iron trade this year will be most satisfactory. For the first half of the year, at least, we can count on cheap raw material, and consequently low cost of production; but there is a possibility, even probability, that after that prices will advance. This will likely be preceded by an advance in the price of pig iron. At present, prices of both foundry and Bessemer grades are being shaded considerably. Some transactions for the latter at less than $10 Pittsburg are spoken of, and in Southern foundry brands sales have been made at material reductions. This is evidently from a desire to realize on stocks, and will not continue.

NOTES OF THE WEEK.

Our Minnesota correspondent, in a letter which appears in another column, states that there is a prospect of an agreement between the Minnesota Iron Company, Norrie mine, and the Colby group of mines in the Gogebic range, by which the price of standard Bessemer ore will be held at $3.50 during the season of 1895. The estimated output of these mines is 3,000,000 tons for this year, or over half the estimated Bessemer ore output, consequently if they make a stand on prices the price of Bessemer pig will move upward in proportion. Of course, in such event the smaller producers would increase their output, and likely the Mesabi miners will take greater care to separate Bessemer and non-Bessemer grades, but they will also take advantage of a higher price, so furnaces having no contracts for 1895 delivery may expect to pay more for their ore.

A letter from Birmingham, Ala., says that two of the Bessemer furnaces which were shut down three weeks ago on account of scarcity of ore, have now started, and the other three will soon go in. All the furnaces in the district which are in operation are pushing their output to the highest point obtainable and stocking but little.

The purchase of 30,000 tons of steel rails at the 1895 price of $22 by the Pennsylvania Railroad is regarded by rail manufacturers as a leader which will be followed by other lines. It is certain that purchases will have to be made this year by many roads, as their main lines have been repaired with rails at one time removed and held for repairs on branches or for new construction. If the purchase of the Pennsylvania people starts them there will be such a lively demand for rails that makers will have their hands full to meet them.

Pig Iron.—While there has been but little local trade this week, the market has a firm tone and a number of inquires are noted for good-sized lots. Quotations are as follows: Northern brands, No 1 X, $12@$12.50; No. 2 X, $11@$12; gray forge, $10@$11; Southern irons, No. 1 foundry, $11.25@$11.50; No. 2 foundry, $10.25@$11.25; No. 1 soft, $10.50@$11; No. 2 soft, $10.25@$10.75.

Spiegeleisen and Ferromanganese.—The market is quiet at $20.50@$21 for 20% spiegeleisen, and $49@$50 for 80% ferromanganese.

Billets and Rods.—The market is dull and little business noted. Quotations at tide water are as follows: Billets $17.50@$18 and domestic wire rods $24@$24.50.

Rails and Rail Fastenings.—The demand for rails has not yet had any appreciable increase, but it is expected that during spring a material improvement will be noted; Rail quotations remain: Standard rails at tidewater, $22.75. In rail fastenings prices remain: Fish and angle plates, 1·20@1·40c. at mill; spikes, 1·40@1·60c.; bolts and square nuts, 2@2·25c.; hexagonal nuts, 2·10@2·30c. delivered.

Structural Iron and Steel.—During the past week there have been but few sales of these materials, but considerable inquiry is noted. The outlook is considered bright, and a number of contracts are in sight. Quotations remain: Angles, 1·20@1·35c.; beams up to 15 in., 1·30@1·50c.; channels, 1·40@1·50c. on dock; tees, 1·50@1·60c. on dock.

Old Material.—This market is without any features of interest. A few small sales have taken place during the week, but nothing of importance. Nominal quotations remain: Old steel rails, $9.50@$10; old iron tees, $10@$11 per ton; New York railroad scrap, $11.50@$12 per ton, delivered at mill, and yard scrap at $10; wrought turnings, delivered at mill, $8@$8.50; No. 1 wrought scrap at $9.50@$10.50 from yard, and machinery cast scrap $9@$10; old wrought tubes and pipe, $6.50@$7; old car wheel, $9.50@$10.50, New York; cast borings, $6@$6.50, delivered at mill.

Merchant Steel.—There is nothing of interest to note in this market. Such sales as have been made are all small lots and amount to but little in the aggregate. Quotations are: Tool steel, 5·65@6·25c.; tire steel, 1·30@1·40c.; toe calk, 1·65@1·75c.; Bessemer machinery, 1·25@1·40c.; open-hearth machinery, 1·85 @2c.; open-hearth carriage spring, 1·70@1·90c.; crucible spring, 3·40@3·65c.; axles, scrap, 1·30@1·50c.; steel, 1·25@1·55c.; bars, common, 1·15@1·30c.; refined, 1·25@1·80c.; steel hoops, 1·45@1·60c. delivered; hooks and pins, 1·40@1·50c.; plates, flange, 1·50@1·65c.; firebox, 2@2·25c.; marine, 2·45@2·70c.; sheared, 1·80c.; shell, 1·40@1·50c.; tank, 1·20@1·40c.; universal mill, 1·25@1·40c. delivered.

Buffalo. Jan. 10.

Special Report of Rogers, Brown & Co.

A more hopeful feeling is taking the place of the despondency which has possessed the minds of manufacturers. Inquiries for good sized amounts are becoming frequent. In each case sales are being effected, but usually the orders are taken by the lowest priced irons without regard to sentiment. During the past two years foundrymen have broadened their iron horizon very materially. If a low price on an unfamiliar iron is offered a sample car follows, and usually a round lot follows the sample. Consumers have found it expedient to use the low priced irons, and demand is now sufficient, so that if the price is low enough iron can be sold. We quote for cash f.o.b. cars Buffalo, viz.: No. 1 foundry strong coke iron, Lake Superior ore, $11.25; No. 2 foundry strong coke iron, Lake Superior ore, $10.75; Ohio strong softener No. 1, $11.75; Ohio strong softener No. 2, $11.00; Jackson County silvery No. 1, $15.75; Lake Superior charcoal $13.75; Southern soft No. 1, 11.25; Southern soft No. 2, $11; Hanging Rock charcoal, $18.50.

Chicago. Jan. 9.

(From our Special Correspondent.)

The first week of 1895 has brought with it but little trade in all branches of the Chicago iron market. This is doubtless from the fact that many concerns using iron make their annual inventory at this time, and are, consequently, awaiting the completion of same before coming into the market again. In no line is there any strength shown in prices, with the possible exception of pig iron, which has been selling at an increase of 25c. over early December prices, but it is hardly probable that any large contract would be refused at the lower rate.

Pig Iron.—The selling of pig iron during the week has been confined wholly to sales of quantities from carload lots up to 200 tons, the largest sale of the week being an ordinary 400 ton one. In number the sales were quite large, but the amount of tonnage in the aggregate would hardly equal what might be called a good sized contract. There is a considerable amount of iron being delivered on contracts; it may be noted that contracts have been booked lately to supply iron throughout the entire year of 1895. Inquiries are numerous for delivery the latter half of this month, and they point to a good business then. In Southern iron the selling conditions are about as Northern, there being little doing, but a good prospect for business as the month draws to a close. In prices the Northern material is fairly steady, but liable to be swayed to catch a good contract. Prices are per gross ton f. o. b. Chicago: Lake Superior charcoal, $13.50@$14.50; Lake Superior coke No. 1, $10.25@$10.50; No. 2, $10@$10.25; No. 3, $9.50@$9.75; Milwaukee Scotch No. 1, $11; No. 2, $10.75; Jackson County silveries, $14.50

@$15; Southern coke, foundry, No. 1, $11@$11.25; No. 2, $10.25@$10.50; No. 3, $10@$10.25; Southern coke, soft, No. 1, $10.25@$10.50; No. 2, $10@$10.25; Southern car-wheel iron, $17.50@$18; Southern silveries No. 1, $11.50@$12; No. 2, $11.50@$12; Tennessee charcoal No. 2, $14@$14.50, Bessemer, $10.50@$11; Ohio strong softeners, $13@$13.50.

Structural Material.—The most important business of the week has been the letting of the contract to construct the great new warehouse of the Sibley Warehouse Company, the contract for the construction being given to Jonathan Clark & Son. This building will need 1,500 tons of steel, and Carnegie & Co. will probably furnish it. Building shapes have had a fair call during the week, but bridge material was in small demand. Quotations are f. o. b. Chicago: Angles, 1·45@1·50c.; tees, 1·65c.; universal plates, 1·50@1·55c.; beams and channels, 1·50@1·60c.

Plates.—But little has been done in plates, and prospects are not very bright for an early revival. There are some sales being made of fair quantities for outside territory. Prices are: Flange steel, 1·65@1·75c.; firebox steel, 1·95@4·50c.; tank steel, 1·40@·50c.; boiler tubes, 70 to 75% discount.

Merchant Steel.—There is an increase in inquiry for delivery the earlier part of this year, some being from the larger implement-houses, but the business of the week was dull. Prices are weak, which are: Carload lots: Smooth-finished machinery, 1·75@1·90c.; tire steel, 1·60@1·70; Bessemer bars, 1·40@1·45c.; toe calks, 2·10@2·20c.; crucible spring, 3·40@3·65c.; tool steel, 5½@6½c.; specials, 10·50@11·50c.

Galvanized Sheets.—Trade for the week has been dull, and it looks as though it would remain so for a time. Mill prices are 80% off, and store 75, 10 and 5% off.

Black Sheet Iron.—No improvement is shown in this line; inquiry does not indicate any change for the coming weeks of January. No. 27 is selling mill lots f. o. b. Chicago 2·35@2·40c.

Bar Iron.—Bar iron has been dull during the first week of the new year, but indications are good for future business. Common iron is selling 1·05@1·10c., and refined 1·15@1·20c.

Billets.—There is not much doing in billets as yet, the sales of the week aggregating small, and at $17 the steel companies are not evidently hankering after business. Inquiry has improved.

Steel Rails.—If there ever was a dull period in steel rails the present time is the dullest without a doubt. The railroads appear to be holding off to the very last moment before placing contracts, but there is one consolation that this state of affairs cannot always last, for rails are not everlasting so far as their service in forming a part of a railroad is concerned; 1895 price on rails is $23.

Old Rails and Wheels.—There has been no business in old iron rails during the week and prices are becoming weaker. In old wheels one sale of 200 tons has been made at $9. Old iron rail prices are about $10.50.

Scrap.—No activity, as activity goes nowadays, has made its appearance in scrap, the market being dull. Quotations are: Forge, $8.50@$9; cast-iron borings, $3.50; wrought iron turnings, $4@$4.50; axle turnings, $6.50; mixed steel, $5.50; tires, $12.50@$13; iron axles, $13.

Philadelphia. Jan. 11.

(From our Special Correspondent.)

Pig Iron.—Brokers and furnace representatives say there is not a single feature in the market different from two weeks ago. One fact seems to be established, viz., that production is to be kept under control. No good irons are being offered. Some inferior stock is being pushed for sale at $12.50. Foundrymen do not care to buy large lots. No. 2 is dull at $11.50 for the average makes. Mill irons are more inquired after and brokers are expecting to record a few big sales before long. Prices, $10.25 to $10.50. Buyers feel the advantages are still on their side.

Muck Bars.—Market dull at $18.50.

Steel Billets.—Billets are dull at $17. Large consumers expected to load up when billets would drop to that, but here they are, afraid to buy more than they must have for immediate use. Our people say bottom has not yet been reached.

Merchant Iron.—The mills are getting back to work, but only in three or four instances do the orders amount to much. Consumers are not ordering iron except in very small lots, but the mills are doing very well. Prices are down to 1·10 and as high as 1·25, quality and size of order determining price.

Skelp.—One or two big orders were virtually promised this week, but the parties have not been heard from.

Sheet Iron.—The sheet iron manufacturers have at last gathered in a few considerable orders that had been promised for December. All the mills have work, but not enough to last more than two weeks if averaged up.

Wrought Iron Pipe.—The pipe mills are doing a little work, but not working to more than half capacity.

Plate.—The bridge works are getting orders, and some work is to be rushed. In fact, brokers who know say bridgework will be good from this out, and prices may harden. The Cramp order is to be followed by smaller ones, 1,000 tons being only the beginning.

Structural Material.—The business reported since January 2d is of a retail character altogether, but if to-day's opinions are sound, the structural mill people will have substantial encouragement in a few days for beams and tees. The brokers decline to give particulars to-day, but hope to have definite information as to work in sight by Monday.

Steel Rails.—The railmakers decline to say whether any other railroad company has followed the example of the Pennsylvania, but current rumor is that at least one more big order will be announced in a very few days.

Old Rails.—The large supply has weakened quotations and it is said $11.50 might be taken, though there are no sales to determine the fact.

Pittsburg. Jan. 10.

(From our Special Correspondent.)

Raw Iron and Steel.—The opening of the second week in 1895 finds the iron trade in a far from satisfactory condition from the standpoint of the producers. At the same time the volume of business is steadily increasing so far as relates to crude material, some think that the increase has only been secured at the expense of values. The following is a comparison of transactions in tons for the first week in January for the past two years:

Jan. 7, 1894.		Jan. 7, 1895.	
Bessemer	4,800	Bessemer	18,500
Billets	8,200	Billets	13,600
Gray Forge	1 050	Gsay Forge	2,825
Total tonnage	27,782	Total tonnage	45,025

The above tables show the increase for the first week of 1895 to be 17,240 tons. Leading manufacturers are confident that as the season advances trade conditions will improve, since the railroads and other large consumers of raw material cannot postpone much longer needed improvements. There is the added fact that the year just closed was in many respects better than 1893, although unsatisfactory, and this leads to the hope that the coming 12 months will show a continuation of the improvement already exhibited during 1894.

In conformation of the above, reports have been received at St. Louis from 200 leading manufacturers of iron and steel, hardware, machinery and railway rolling stock as to the condition of their business since midsummer, the proportion of it with the South and the extent and significance of the prospects for 1895. The tone of the responsors is cheering. Broadly speaking, about 85% of the reports speak of some measure of improvement in conditions and prospects, and where the gains in business are explicitly stated they are generally given at 25 to 30%. In iron and steel the demand has increased 25 to 30%, but prices are low and not promising for the immediate future. The hardware trade brings out rather conflicting reports; there is much complaint about prices on all hands, but especially among nail and barb wire manufacturers. The volume of business, on the whole, increased substantially, and the prospects may be regarded as reasonably fair. For machine tools some decidedly cheering reports are made.

Later: The demand is improving; sales show up well. Prices Bessemer and steel billets maintained; ferro-manganese lower; sheet bars higher. Steel wire rods declined 25c., skelp steel advanced.

COKE SMELTED LAKE AND NATIVE ORE.

Tons.		Cash.
4,000	Bessemer, Jan., Feb., March	$9.90
4,000	Bessemer, Valley Furnace, next 3 mos	9.40
2,500	Bessemer, Jan., Feb., March	10.00
2,000	Bessemer, Jan., Feb., March	9.85
2,000	Bessemer, Valley furnace, March, April, May	9.45
1,500	Mill Iron, City Furnace	9.25
1,000	Bessemer, Jan., Valley Furnace	9.10
1,000	Bessemer, Jan., Feb	10.05
750	No 1 Foundry, Jan., Feb	10.75
700	Gray Forge, next 3 mos	9.25
600	Mill Iron, prompt	9.25
300	Gray Forge, Jan., Feb	9.25
200	No. 1 Foundry	11.25
200	No. 2 Foundry	10.25
100	No. 1 Foundry	10.65
50	No. 1 Silvery	13.75
50	No. 2 Foundry	10.25

CHARCOAL.

125	Cold Blast	23.25
50	No. 2 Foundry	16.00
50	Extra Charcoal	27.60
25	Cold Blast	23.25

BLOOMS, BILLETS.

3,000	Billets, Jan., Feb., March, at mill	$15.10
2,500	Billets, Jan., Feb., March, at mill	15 20
2,000	Billets, Jan., Feb., at mill	15.15
1,500	Billets, Jan., Feb., at mill	14.90
1,000	Billets, Jan., at mill	14.90
1,000	Billets, Jan, Feb., at mill	15.00
500	Billets, prompt, at mill	15.00

SKELP IRON.

800	Wide gr'v'd, 1·12½ 4 m.
500	Sheared 1·27½ 4 m.
300	Nar'w gr'ved, 1·12½ 4 m.

SKELP STEEL.

1,000	Nar'w gr'ved 1·00 4 m.
900	Wide gr'ved 1·00 4 m.
580	Sheared 1·15 4 m.

SHEET BARS.

300	At maker's mill 21.00

MUCK BAR.

350	Neutral, delivered 18 30

FERRO-MANGANESE.

100	80% Delivered 47.50

BLOOMS, BILLETS, BAR ENDS.

800	Bloom and billet ends, delivered .10.25

STEEL WIRE RODS.

7,000	5 gauge, at mill 21.00

SPELTER.

100	Prime Western 3.24

OLD RAILS.

300	Iron rails 12.50
200	Steel rails 10.25
375	Cut wrought pipe, net 8.00
350	Sheared wrought pipe, net 10.25
200	Fish plates, gross 12.25
200	Cast and machine scrap, gross 9.00
200	Heavy steel scrap, gross 10.00
100	Railroad malleable, net 8.00
100	Soft steel, gross 10.00

Cartagena, Spain.

(Special Report of Barrington & Holt.)

The opening prices for January may be reported as follows, in all cases f. o. b. at port of shipment: Ordinary 50% Portman iron ore, 5s. 2d.@5s. 5d. per ton; special low phosphorus, 5s. 4d.@5s. 8d., with 6s. 2d. for extra quality; specular iron ore, 8s. 8d. per ton; manganiferous No. 1, 20% manganese, 11s. 6d.; No. 2, 15% manganese, 8s. 9d.; and No. 3, 13% manganese, 8s. 3d.

In miscellaneous ores manganese ore, 35% to 40%, is quoted at 10d. per unit; iron pyrites, 40% iron and 45% sulphur, 10s. 6d. per ton; yellow ochre, best quality, 42s. 6d.

No improvement can be reported for December, only four cargoes having been shipped during the first half of the month, three of them going to England and one to America. Exchange has somewhat recovered, and prices are therefore not much higher than during the previous few months.

METAL MARKET.

NEW YORK, Friday Evening, Jan. 11, 1895.

Gold and Silver.

Prices of Silver per Ounce Troy.

January.	St. Ex.	London Pence.	N. Y. Cts.	Value of £1, in $.	January.	St. Ex.	London Pence.	N. Y. Cts.	Valu eof £1, in $.
5	4.88¼	27 7/16	59¾	.463	9	4.88⅜	27⅝	59¾	.462
7	4.88¼	27 7/16	59⅞	.463	10	4.88½	27¼	59¼	.460
8	4.88⅜	27 7/16	59¾	.462	11	4.88½	27 7/16	59⅝	.461

The market is quiet with very little fluctuation in price. The sale of only 16 lakhs of Council bills on Wednesday being considered a weak allotment, silver sympathized to the extent of a fractional decline, and closes with a moderate inquiry.

The United States Assay Office at New York reports the total receipts of silver at 74,000 oz. for the week.

Gold and Silver Exports and Imports.

At all United States Ports, November, 1894, and Eleven Months, 1894 and 1893.

	Gold.		Silver.		Total excess, Exp. or Imp.
	Exports.	Imports.	Exports.	Imports.	
Nov. 1894	$419,999	$1,919,600	$3,601,589	$670,558	E. $1,431,430
11 mos. 1894	92,009,321	20,213,610	13,348,728	8,979,906	E. 106,161,533
11 mos. 1893	77,121,275	72,016,144	41,043,039	17,342,785	E. 28,805,345

The statement includes all United States ports the figures being furnished by the Bureau of Statistics of the Treasury Department.

Gold and Silver Exports and Imports, New York.

For the week ending January 5th, 1895, and for Years from January 1st, 1895, 1894, 1893 and 1892.

	Gold.		Silver.		Total Excess. Exp. or Imp.
	Exports.	Imports.	Exports.	Imports.	
We'k	$3,574,536	$25,763	$297,573	$55,498	E. $3,790,848
1895	3,574,536	25,763	297,573	55,498	E. 3,790,848
1894	5,200	115,156	925,410	71,944	E. 743,510
1893	2,055,740	14,306	5,400	1,754	E. 2,045,036
1892	4,000	62,009	190,695	58,009	E. 59,699

The gold exports for the week were to France and Germany, being nearly evenly divided between the two countries; the silver went to London. The gold imported was from the West Indies; the silver from Central America.

During the five days ending January 10th the imports and exports gold and silver from the port of New York were as follows: Imports, gold, $11,115; silver, $21,240. Exports, gold, $33,300; silver, $572,950. All the gold exported was in American coin and went to West Indies. Of the silver exported, $29,800 was in Mexican coin, $15,000, of which went to South America and $14,800 to London; the rest was in American coin and bullion and went to London. There was also in transit $17,974 in Mexican coin, $7,574 of which went to France, and the remaining $17,400 to London.

FINANCIAL NOTES OF THE WEEK.

We can only repeat to-day what we said a week ago, that while there is promise for the future, the advance of business is delayed by the currency troubles and the apprehension excited by the renewed outflow of gold, which is after all a symptom and not a cause.

The Carlisle currency bill may be considered as dead for the present, the House of Representatives having refused to pass the rule ordering a final vote. It looks now as if the Democratic majority was hopelessly divided on the currency question, while the Republican minority will do nothing at this session, and is, indeed, but little less divided. Should the result be a complete failure to act now, there is talk of an extra session, which seems altogether likely.

Meantime the Banking and Currency Committee has not given up the fight, but is considering several bills submitted, all of the same general tenor,

It is said that a bill of the general tenor of the Sperry bill will be reported, providing for the issue of low-rate bonds for currency as a beginning of the retirement of the legal tenders. This may be accompanied by an act providing for the appointment of a currency commission.

An amendment requiring the payment of a certain proportion of the customs duties in gold is strongly urged, and may be added to the bill.

No gold was shipped abroad by the mid-week steamers this week, but about $2,500,000 is reported taken for shipment by to-morrow's (Saturday) steamers. The movement is still to France chiefly, although some is going to Germany. No shipments to England are reported. Nearly all the gold taken for export was from the Sub-Treasury in exchange for legal tenders, very little coming from the banks.

The statement of the New York banks for the week ending January 5th shows increases of $393,200 in surplus reserve, $743,000 in loans, $2,106,000 in specie, $3,556,400 in deposits, and $110,400 in circulation; a decrease of $624,100 in legal tenders. The total reserve amounted to $174,074,000, being $35,892,050 in excess of the legal requirement. A comparison of the bank and the Treasury statement indicates that there has been a considerable exchange of gold and legal tenders going on.

The statement of the United States Treasury on Thursday, January 10th, shows balances in excess of outstanding certificates as below, comparison being made with the corresponding day of last week:

	Jan. 3d.	Jan. 10th.	Changes
Gold	$86,244,445	$81,080,982	D. $5,163,463
Silver	7,650,304	8,344,668	I. 694,364
Legal tenders	32,954,157	28,476,511	D. 4,477 646
Treasury notes, etc.	26,488,672	36,125,194	I. 9,636,522
Total	$153,337,578	$154,027,355	I. $689,777

Government deposits with national banks on the same date amounted to $15,304,256, an increase of $13,744 during the week.

The total Treasury receipts for the week ending January 5th are given below, in comparison with those for the corresponding weeks in 1894 and 1893:

	1893.	1894.	1895.
Customs	$2,992,368	$2,203,181	$3,501,166
Internal revenue	2,288,108	2,255,865	1,715,560
Miscellaneous	895,385	1,163,216	401,756
Total	$6,175,861	$5,622,262	$5,618,879

The receipts show an increase of $1,196,903 over those of the preceding week.

The coinage of the United States Mint for the calendar year 1894 was as follows:

Denominations.	Pieces.	Value.
Double eagles	2,417,540	$48,350,800 00
Eagles	2,603,278	26,032,780 00
Half eagles	1,030,455	5,152,275 00
Quarter eagles	4,122	10,305 00
Total gold	6,055,395	$79,546,160 00
Standard dollars	3,093,972	$3,093,972 00
Half dollars	7,335,662	3,367,831 00
Quarter dollars	8,933,793	2,234,448 25
Dimes	2,050,996	205,099 60
Total silver	21,414,423	$9,200,350 85
Five cents	5,413,132	$270,656 60
One cent	16,752 132	167,521 32
Total minor	22,165,264	$438,177 92
Total coinage	49,635,082	$89,184,688 77

As compared with 1893 the total coinage was as below:

Pieces.	1893.	1894.	Changes.
Gold	5,324,464	6,055,395	I. 730,931
Silver	27,391,272	21,414,423	D. 5,976,809
Copper	60,012,390	22,165,264	D. 37,847,126
Totals	92,728,086	49,635,082	D. 43,093,004
Values.	**1893.**	**1894.**	**Changes.**
Gold	$56,997,020.00	$79,546,160.00	D. $22,549,140.00
Silver	8,802,797.30	9,200,350.85	I. 397.553.55
Copper	1,134,931.70	438,177.92	D. 696,753.78
Totals	$66,934,749.00	$89,184,688.77	I. $22,149,839.77

The changes are due to the employment of the mints on gold coinage to a large extent, and the decrease in silver and minor coins. The total value of the coinage is larger than in any year since 1882.

Coinage at the San Francisco mint in December was, in value, $2,036,000 in gold and $394,397 in silver. For the full year the coinage was as follows, comparison being made with the year 1893:

	1893.	1894.	
	Amount.	Pieces.	Amount.
Double eagles	$19,823,500	1,048,550	$20,471,000
Eagles	1,413,500	25,000	250,000
Half-eagles	1,120,000	55,900	279,500
Total gold	$22,357,000	1,129,450	$21,500,500
Standard dollars	100,000	1,260,000	1,260,000
Half-dollars	370,000	4,048,690	2,224,345
Quarter dollars	363,634	2,648,820	662,205
Dimes	249,140	300	3
Total silver	$1,082,774	7,957,540	$3,946,553
Totals	$23,439,774	9,086,990	$25,447,053

Since its establishment in 1854, this mint has coined $846,436,857 in gold and $136,279,480 in silver, a total of $982,716,337 in 41 years.

The imports of specie by water at San Francisco in November amounted to $197,672, including $141,095 from Mexico, $1,060 from Australia and $49,289 from British Columbia. The proportions were $76,338 in gold and $127,334 in silver.

The San Francisco "Bulletin" says that the receipts of treasure at San Francisco for the year 1894, through Wells, Fargo & Co.'s Express, amounted to $11,586,717. The monthly totals for the first half of the year varied from $456,751 in March to $909,982 in June, and for the last half from $782,341 in July to $1,791,869 in December. Over 60% of the total came to hand in the last half of the year. The general sources of the receipts were as follows: From the interior, $10,813 357; from the north coast, $773,360; total, $11,586,717. The descriptions embraced in this total are annexed: Coin, $6,527,129; silver bars, $3,005,313; gold bars and dust, $2,054,275; total, $11,586,717. The Express carries more money into the interior than it brings from the interior. The inland shipments for the year, together with the coin sent overland, were as follows: Interior, $26,745,162; overland, $8 668,980. The interior shipments are largely in the form of coin.

The government of Ecuador has contracted to have $500,000 in 20-cent pieces coined by the United States mint. The bullion will be furnished by Ecuador and that country will also pay the cost of the coinage. The work will be done at the Philadelphia mint.

The Bank of England on Thursday, January 10th, reported its total gold holdings at £33,880,112; an increase of £8,066,122 as compared with the corresponding date last year. The movement has been temporarily reversed, the Bank showing this week an increase of £789,000 in specie instead of a small loss as for several weeks past. Most of the increase came from receipts of South African and Australian gold, a small part, however, coming from eastern Europe. The Bank has again increased its proportion of reserve to liabilty, which on Thursday stood at 55·65%, against 53·34% last week and 46·50% a year ago. A point in the Bank's statement this week is the increased demand reported for loans, and the rate is stronger now than for some time past, although no change has been made in the official discount rate.

The Bank of France on Thursday, January 10th, reported its total specie holdings at 2,079,495,000 fr. gold, and 1,232,920,000 fr. silver; an increase of 382,887,702 fr. gold, and a decrease of 23,567,674 fr. silver, as compared with the corresponding date last year. Changes for the week were an increase of $10,250,000 fr. gold, and a decrease of 2,675,000 fr. silver. The Bank continues to accumulate gold, the increase shown above, like that of last week, being made in spite of the heavy payments required on the new Russian loan, and on some other similar transactions.

Specie holdings of other European banks on Thursday, January 10th, are reported by cable to the "Journal of Commerce" as below:

	Gold.	Silver.	Total.
Imp. Bank of Germany	....	....	$256,210,000
Austro-Hungarian Bank	$75,923,000	$70,160,000	146,083,000
Netherlands Bank	20,452,000	34,223,000	54,675,000
Belgian National Bank	.....	....	26,792,000
Bank of Spain	40,021,000	55,613,000	95,664,000

The Imperial Bank of Germany and the Belgian National Bank do not report gold and silver separately. The latest report from the Imperial Bank of Russia, of date November 28th—December 10th, gives its holdings at $222,950,000 gold and $117,805,000 silver.

The new Austrian gold loan is not yet officially announced, although it is generally understood that the arrangements are practically completed. As we have noted before, a considerable part of the gold which will be needed for this loan is already accumulated.

Shipments of silver from London to the East for the year up to December 28th are given by Messrs. Pixley & Abell's circular as below:

	1893.	1894.	Changes.
India	£6,805,421	£5,012,093	D. £1,793,328
China	2,390,969	2,728,771	I. 337.802
The Straits	1,612,513	1.233,446	D. 379,067
Total	£10,808,903	£8,974,310	D. £1,834,593

Shipments for the week were £17,640 to India. Receipts of silver in London for the week were £37,000 from the West Indies and £138,000 from New York.

The India Council this week offered 60 lakhs of bills in London, 10 lakhs more than the weekly allotment for some time past. The market was weak, however, and the demand for exchange unusually light and not all the bills offered were taken. The price declined a little, to about 12 7/32d. per rupee. It is announced that the weekly offering of Council bills will continue to be 60 lakhs for several weeks to come, but it is possible, in view of this week's comparative failure, that a change will be made. With an almost entire cessation of the demand for China and in the present condition of the Indian export trade there is apparently nothing to prevent exchange going to 12d. per rupee.

From April 1st to the end of the year the total sales of Council bills in London amounted to 218,037,015 rupees, realizing £11,980,710, an average of 13·18d. per rupee. In the corresponding period of 1893 the amount realized on Council bills sold was £6,491,985, showing an increase of £5,488,725 for the nine months last year.

The total amount of new issues of stocks and bonds brought forward in London during the year 1894 was £91,835,000, an amount which compares with £49,141,000 in 1893; £81,137,000 in 1892; £104,595,000 in 1891, and £142,565,000 in 1890. No less than 46% of these issues was made in the last quarter of the year. The amount was divided by quarters as follows: First three months, £11,358,000; second, £19,719,000; third, £18,140,000; fourth, £42,618,000. As to the nature of the applications, foreign government loans amounted to £22,692,000; Indian and Colonial loans, £13,129,000; British municipal loans, £8,869,000; Colonial municipal loans, £2,041,000; British railroads, £6,384,000; foreign railroads, £9,411,000; mining and land companies, £5,018,000; industrial and miscellaneous companies, £24,350,000. Of the amount classed under mining companies, over two-thirds was furnished by the Western Australian gold and land companies floated.

The fire losses of the United States and Canada are estimated by the "Journal of Commerce" at $128,246,400 for the year 1894, against $156,445,875 in 1893 and $132,704,700 in 1892. The marked increase in the panic year was not unusual or unexpected.

Negotiations for peace between Japan and China are at a standstill for the present, but there is a probability of their early renewal. It is understood that any terms of peace will involve the payment of a large sum by China.

The report of the Superintendent of the New York State Canals for the season of 1894 says that the number of tons carried on the canals during the season was 3,882,550, as follows: Erie Canal, 3,144,144 tons; Champlain, 550,279; Black River, 56,021; Oswego, 98,843; Cayuga and Seneca, 33,270. This tonnage was made up as follows: Product of the forest, 872,601 tons; agriculture, 1,412.142; manufactures, 87,241; merchandise, 352,741; other articles, 1,157,835. Of the total tonnage 2,818.254 tons were shipped east and 1,065,306 tons went west. The through freight aggregated 2,303,319 tons and the way-freight 1,579.241 tons. Of the total tonnage 713,621 tons were of boards and scantlings; 903,361 of wheat; 275,237 of corn; 160,874 of oats, and 532,584 tons of anthracite coal. Comparing the season of 1894 with that of 1893 there is found to be a loss of tonnage amounting to 449,403 tons. The past season's tonnage is the smallest that has been transported upon the canals any year since 1859, and is the result of various causes, the principal ones being the general stagnation of business and the sharp competition of the railroads.

Domestic and Foreign Coins.

The following are the latest market quotations for the leading foreign coins:

	Bid.	Asked
Mexican dollars	$0.48¾	$0.49⅜
Peruvian soles and Chilean pesos	.48	.49
Victoria sovereigns	4.87	4.89
Twenty francs	3.86	3.88
Twenty marks	4.75	4.78
Spanish 25 pesetas	4.82	4.85

Other Metals.

Copper.—A great deal of business has been done during the week; in fact, much more than appears on the surface. The demand for wire bars and cakes continues good, and as Calumet is the only lake company which can supply these shapes for the present and they are holding for 10c. without excepiton, buyers had to pay this price or fall back on electrolytic copper, for which rather higher prices have been paid. Considerable quantities of Lake ingot copper also changed hands from 9⅝@9·92½, and now 9·95 is asked. For electrolytic copper we have now to raise the price to 9·75@9·85. For casting copper the demand remains somewhat slack, but there are no sellers below 9½. The exports so far this month have again been very heavy indeed, but as present prices for copper here are rather above the parity of Europe, new sales are not made for export to Europe.

In marked contrast with the above is the London

market, which has been rather flat, and on the 10th inst. G. M. B's declined to £40 7s. 6d., but the market is a little steadier to-day, being quoted £40 10s. @£40 12s. 6d. for spot and 7s. 6d. more for three months' prompt. For refined and manufactured we quote: English tough, £42 15s.@£43; best selected, £43 10s.@£44; strong sheets, £50 10s.@£51; India sheets, £47@£48, yellow metal, 4 3-16d.

There is evidently a pressure to sell the inferior grades of copper, but we understand there is also quite a good demand for the finer grades, so that the position is about the same as here.

We are informed that the contract for refining their copper which existed for 2½ years between the Baltimore Electric Refining Company and the Davis Brothers, of Baltimore, Md., expired by limitation on January 1st, 1895.

Copper Exports.—The exports of copper from the port of New York for the week ending January 10th, 1895, as reported by the New York Metal Exchange, were as follows:

Havre—La Bretagne	Pigs	25 tons
" "	Ingots	25 "
Liverpool—Lucania	Pigs	97 "
Rotterdam—Werkendam	Bars	60 "
" "	Ingots	175 "
" "	Plates	170 "
Liverpool—Strathleven	Plates	25 "
Antwerp—Pennland	Plates	20 "
Manchester—Biela	Plates	50 "
Liverpool—Bovic	Pigs	93 "
" —Etruria	Pigs	100 "
Havre—La Gascogne	Plates	25 "
Matte:		
Liverpool—Bovic		650 "
Hamburg—Hispania		52 "
Liverpool—Acanthus		500 "

Exports of copper from Baltimore for the week ending January 10th are reported by our special correspondent as follows:

Rotterdam—Prodano	2,439 bars	333,350 lbs.
Liverpool—Sedgemore	900 cakes	282,121 "
" "	Scrap copper	3,061 "
Havre—Warwick	4,184 bars	270,241 "

Exports of metals other than copper from the port of Baltimore for the week ending January 10th are reported by our special correspondent as follows: 663 bundles tin scrap, 112,950 lbs., to Rotterdam.

Imports and Exports of Metals.—Imports of metals into this port for the week ending January 3d are reported by the New York Metal Exchange as follows: 50 tons Australian tin, 46 tons Straits tin, 50 casks antimony from London; 10 tons Silesian spelter from Stettin.

Exports of metals (other than copper) from this port for the week ending January 3d are reported by the New York Metal Exchange as follows: 99 tons scrap iron to Shanghai; 2 tons old brass to Liverpool; 11 tons tin scrap to Antwerp; 55 tons tin scrap to Rotterdam.

Arrivals at Baltimore for the week ending January 4th were 25 tons tin from London; 8,105 boxes tinplates from Great Britain.

Arrivals at Philadelphia for the week ending January 3d were 2,000 tons iron ore from Spain; 3,100 tons iron ore from Cuba; 25 tons tin from London; 3,445 boxes tin and black plates from Great Britain.

Tin has again suffered a decline, and London has gone below £60. Especially during the last few days the tendency has become very weak, and there appeared to be rather a pressure to sell while support was lacking. The tremendous increase in statistics and the expected heavy shipments from the East do not speak favorably for the article at the moment, especially when the weak tendency for silver is taken into account. On the other hand, prices have come down to such a low level that the bottom must soon be reached. Sales were not numerous in our market, as buyers are acting in a very conservative way. We have now to quote 13·20@13·30.

London closes at £59 5s. spot and £59 7s. 6d. for futures.

Lead shows a marked improvement. The lower prices recently established and the cold weather have affected production, and refiners were retired from the market. There being several large orders in the market, buyers themselves again bid up the price, and we close very firm at 3·10@3·12½, or an advance of from 2 to 3% against the previous week.

The foreign market also shows a marked improvement, and Spanish lead is quoted £9 13s. 9d.@15s.; English lead 2s. 6d. higher.

St. Louis Lead Market.—The John Wahl Commission Company telegraphs us as follows: "Lead strong and higher; latest sales made on a basis of 2·[illegible] It looks as though a little boom had been start[illegible]ted."

Spanish Lead Market.—Our special correspondents at Cartagena report local prices for pig lead lower, owing to the fall in the London market. Silver, which has been for some time 14 reales per ounce, has fallen to 13 reales. The latest quotations we give as follows: Argentiferous lead per quintal on wharf, 41 reales; silver to be liquidated at 13 reales per ounce. Shipments of pig lead from Cartagena for the four weeks ending December 11th were 4,519,199 kg., of which 1,078,753 kg. went to Marseilles, and the balance to the United Kingdom. Miners and smelters here have petitioned the government, on account of the bad state of the lead industry, to abolish or suspend the export duty of 10 pesetas per ton on lead, the 2% royalty on the output of mines, and also to abolish the increase of 30% on surface royalties and the tax of 1 peseta per kilogram on explosives which was passed in 1893. Pending a result from these petitions, smelters are now holding their stocks, and it is reported that most of them will shut down should the concessions not be made. Lead ores are quoted as below: Potter's ore, 8s. 3d. per cwt.; Linares sulphide ore, 6s. 3d. per cwt.; Linares carbonate, 4s. 2d. per cwt.; all f. o. b. Cartagena.

Spelter continues flat, and consumers have again been able to buy in cheaper than ever before. Sales have been made on the parity of 3·25@3·30, delivered New York, but the business has not been large.

The London market continues dull at £14 5s. for good ordinaries and £14 7s. 6d. for specials.

Antimony.—Only a retail business has been done. Cookson's at 8½c. and Hallett's at 7¼c.

Aluminum.—Current quotations are unchanged as follows, No. 1 being over 98% pure metal, and No. 2 over 94% pure: No. 1 in rolling ingots, 63c. per lb. for small lots at factory; 60c. in 100 lb. lots, 58c. in ton lots. No. 1 in ingots for remelting, 60c. for small lots, 55c. for 100 lb. lots, and 53c. in ton lots. No. 2 in ingots for remelting, 55c., 53c. and 50c. per lb., according to size of order. Sheets, 80c. @$4.40 per lb., according to size and thickness. Wire, $1@$2.50 per lb., according to gauge. Castings, 90c. per lb. up, according to number, weight, patterns, etc. Tubes, from 20c. to $3.15 per foot, according to thickness and diameter.

Abroad quotations for 99% pure metal in Paris are 5@6 fr. per kilo. for ingots; 7·50 fr. and upward for sheets; 10 fr. for wire over 0·5 mm. and 15 fr. up for tubes. The Neuhausen Company quotes No. 1 (guaranteed 98% pure, and in fact 99·75%) at 5 fr. per kilo. for ingots in small lots; for large lots a considerable discount is allowed. This price is at the works in Switzerland.

Bismuth.—No late sales in New York are reported. Quotations are nominal at $2.00@$2.50 per lb., according to quantity.

Magnesium.—No quotations are to be found for this metal in New York, where sales are usually made in small lots for special purposes only, and on private terms. Prices in Germany are, for lots of over 10 kilos.: Ingots, $6.75 per kilo.; bars, $6.50; powder, $9, ribbon and wire, $9.50. For orders of less than 10 kilos., 25 cents per kilo. must be added for ingots or bars, and 50 cents for ribbon, wire or powder. These prices are delivered at works; the Aluminum und Magnesium Fabrik, Hemelingen, Germany, is the only maker of the metal in commercial quantities.

Nickel.—Sales reported are all on private terms. Quotations are nominal at 38@42c. London quotations are 16@17d. per lb., and somewhat firmer. In Paris no change is reported; pure metal is quoted at 5 fr. per kilo., equal to about 43½c. per lb. Copper-nickel alloy, 50% nickel, 2 75@3 fr. per kilo.

Phosphorus.—Quotations are steady at 50@52½c., f. o. b., New York or Philadelphia.

Platinum.—Abroad the prices are somewhat unsettled, but no material change is reported.

For chemical ware, hammered metal, Messrs. Eimer & Amend, New York, quote crucibles and dishes 41c. per gram for orders of over 250 grams; 43c. for orders of 100 grams or over, and 45c. for small lots. Wire and foil are 40c., 41c. and 42c. per gram. respectively, for orders of the quantities named. Current retail prices for crucibles are 50c. per gram.

Sodium.—In England and Germany makers quote 85c.@$1 per lb., according to quantity. Sales in this market are too small! furnish quotations.

CHEMICALS AND MINERALS.

NEW YORK, Friday Evening, Jan. 11, 1895.

Heavy Chemicals.—The general situation of this market has not changed since our last report. There has been some demand for prompt delivery but none of the sales reported is of any magnitude. Caustic soda remains quiet but steady, with prices for contracts rather easier than a month ago. The supply on the spot is light, and prices for immediate delivery are fairly firm. Alkali and carbonated soda ash are both in better inquiry for future delivery, and several fair sized sales are reported. Bleaching powder is in good demand. The agents report that the volume of business done since January 1st is considerably in excess of the sales during the corresponding period last year. We quote: Caustic soda, 60%, 2·10@2·25c. for spot; futures 2c. and upward; 70 to 74%, 2·05@2·30c. Carbonated soda ash, 48%, is95c.@$1, according to quantity and delivery; small parcels range higher. Alkali, 48%, is 97½@1c., with special makes at 1@1·05c. Bicarb is 2@2½c. for spot. Bleaching powder is 1·75@1.90c. for English; 1·50@1·65 for German and Belgian. Sal soda, 70@75c.

Acids.—There has been rather more contracting during the week, although the volume of business for delivery through the year has been smaller than usual. A fair jobbing demand for the various acids is reported. We continue to quote per 100 lbs. in New York and vicinity, in lots of 50 carboys or more: Acids, acetic, $1.40@$1.65 (in barrels). Muriatic, 18°, 80@90c.; 20°, 90c.@$1.15; nitric, 36°, $3.25@$4; 40°, $4@$4.50; 42°, $4.50@$5 25. Mixed acids according to mixture: oxalic, $7@$7.50. Sulphuric, 60°, 60@70c.; 66°, 70@85c. Blue vitriol is quoted at $3.25@$3.50.

Brimstone.—We must continue to report a very quiet brimstone market. Quotations for best unmixed seconds are $16.75@$17 for spot, and $16.25 @$16 50 for shipments. Best thirds are $1 less.

Fertilizing Chemicals.—There is no improvement to report in this market. Business continues limited, only a few sales being reported. The German syndicate has made prices for 1895 for the potash salts. They will be found below. The ammoniates continue dull and more or less weak in prices. We quote: Sulphate of ammonia, gas liquor, spot, $3.15; prompt shipments, $3.10; bone, $3@$3,05. Dried blood, high grade, $2 10@$2.15; low grade, $2 @$2.05 per unit. Azotine, $2.10. Concentrated phosphate (3% available phosphoric acid), 75c. per unit. Acid phosphate, 13% to 15%, av. P_2O_5, 57c. per unit at seller's works in bulk. Dissolved bone black, 17% to 18%, P_2O_5, 90c. per unit. Acidulated fish scrap, $12 50@$13, and dried scrap with few or no sales, nominally $21 f. o. b. fish factory. Tankage, high grade, $21@21.50; low grade, $20. Bone tankage, $22; ground bone, $20. Bone meal, $23@$24.

In lots of 50 tons on contracts we quote, per 100 lbs: Double manure salts, 48-53% (basis of 48%): New York, Boston and Montreal, $1.10; Philadelphia and Norfolk, $1.12½; Charleston, Savannah, Wilmington, N. C., and New Orleans, $1.15. Sulphate of potash, 90%, and minimum, 96% respectively (basis of 90%): New York, Boston and Montreal, $2 05@ $2.09; Philadelphia and Norfolk, $2.07½@$2.11½; Charleston, Savannah, Wilmington, N. C., and New Orleans, $2.10@$2.14.

Muriate of Potash.—The new quotations for lots of 50 tons are as follows: 80 85% and minimum 95%, respectively (basis of 80%): New York, Boston and Montreal, $1.75@$1.78; Philadelphia and Norfolk, $1.77½@$1.80½; Charleston, Savannah, Wilmington, N. C., and New Orleans, $1.80@$1.83.

Kainit.—Prices for kainit (minimum 23%) for 1895 delivery per ton of 2,240 lbs. are as follows for invoice and actual weights respectively: New York, Boston and Philadelphia, $8 55@$8.80; Norfolk, $8.90@$9.15; Charleston, Savannah, Wilmington, N. C., and New Orleans, $9.30@$9 55.

Sylvinit.—Prices for sylvinit, 27-35%, per unit per ton of 2,240 lbs. for invoice and actual weight, respectively: New York, Boston and Philadelphia, 36½@37½c.; Norfolk, 37½@38½c.; Charleston, Savannah, Wilmington, N. C., and New Orleans, 39 @40c.

Charleston, S. C. Jan. 8.

(From our Special Correspondent.

Our fertilizer trade continues in a depressed condition, although in the past few days there has been a slightly improved demand and a better feeling in it. Manufacturers are still inclined to sell much of their manufactured goods at about cost, or even a shade below. The sales of manufactured goods have been very light, acid phosphates 13¼%, at $8, f. o. b. cars or vessels in bulk cash. Ammoniated goods 2½% ammonia, $17.50@$18 in bags f. o. b. cars cash; high grade land rock, kiln dried, $3.65@$3.75, and low grade at $3; river rock, $3.75; ground rock, $5 50, buyers' bags. The production of rock has decreased and if there is any change in prices it will be upward. Prices are too low now to decline any more unless producers are willing to do so at an actual loss, and this they will not do.

Liverpool. Jan. 2.

(Special Correspondence of Joseph P. Brunner & Co.)

The chemical market here still wears a holiday aspect, and there is no special change to report as to the position.

Soda ash is in a firm position, and for prompt delivery we quote range as follows: Leblanc ash, 48%, £3 15s.@£4 per ton; 58%, £4@£4 5s. per ton net cash.

Ammonia ash, 48%, £3 5s.@£3 10s.; 58%, £3 10s.@ £3 15s. per ton, net cash; bags 5s. less.

Soda crystals are dull at £2 7s. 6d.@ £2 10s. per ton, less 5%.

Caustic soda is firmer for forward delivery, but slow on the spot. We quote spot range, according to destination, as follows: 60%, £6 7s. 6d .@£7 per ton; 70%, £7 7s. 6d@£8 per ton; 74%, £8 10@£9 per ton; 76%, £9 10s.@£10 per ton, net cash. For parcels under 10 tons, 5s. per ton extra is charged.

Bleaching powder is rather inactive, and for hardwood packages £7 5s.@£7 15s. per ton net cash may be called the nominal spot range, according to destination.

Chlorate of potash is still very slow and 5d. per lb. is about nearest value for any position, although makers quote 5¼d. for prompt delivery.

Bicarb. soda is still quoted at £6 15 per ton, less 2½% for 1 cwt. kegs, with usual allowances for larger packages.

Sulphate of ammonia is weak and nearest spot values are about £11 5s.@£11 10s. per ton, less 2½%, for good gray 24 25%, in double bags f. o. b. here, according to quality.

Nitrate of soda is slightly lower at £9@£9 2s. 6d. per ton, less 2½%, for double bags f. o. b. here.

Carb. Ammonia—Lump, 3½d. per lb.; powdered, 3¾d. per lb., less 2½%.

MINING STOCKS.

Complete quotations will be found on pages 46 and 47 of mining stocks listed and dealt in at:

New York.	Denver, Colo.	Salt Lake, Utah.
Boston.	Aspen, Colo.	London, England.
Baltimore.	Colorado Springs.	Paris, France.
Philadelphia.	Duluth, Minn.	Mexico.
San Francisco.	Helena, Mont.	Shanghai, China.

Friday Evening, Jan. 11, 1895.

The volume of business done in the mining stock market during the past week has been smaller than usual, but the number of stocks traded in is somewhat greater. The market has been without any feature, and there have been fewer inquiries. The total number of shares sold during the week was only 4,490.

The Comstocks have been in a slightly improved demand and prices show a small advance. Of Alta 200 shares were sold at 46c. Consolidated California & Virginia advanced from $3.55 to $4.40, and sales amounted to 590 shares. Best & Belcher shows sales of 300 shares at $1.10@$1.20. Mexican advanced from 95c. to $1.10, although only 200 shares changed hands. Comstock Tunnel was quiet this week, only 500 shares being sold at 6@7c. Other sales were: 200 shares of Chollar at 51c.; 300 shares of Gould & Curry at 50@51c.; 100 shares of Hale & Norcross at $1.25; 400 shares of Ophir at $2; 100 shares of Sierra Nevada at 80c., and 200 shares of Yellow Jacket at 44@48c.

Of the California stocks Standard Consolidated was in good demand, and the price ruled steady at $2; 600 shares changed hands at this price. Of Bulwer 200 shares were sold at 8@9c. There was a sale of 200 shares of Plymouth Consolidated at 25c.

There was a solitary sale of 100 shares of Homestake at $18.

Horn Silver was stationary, at which price 300 shares changed hands.

No Colorado stock was dealt in during the week.

Boston. Jan. 10.

(From our Special Correspondent.)

The feature of the copper share market the past week was the speculation in Boston & Montana, which, on the good showing of the company of its operations the past year and the expectation that its dividends may be materially increased, was in active demand, and advanced on large transactions from $33½ to $35¾, losing $½ only in the closing sales. Over 7,500 shares were traded in, and the whole market felt the influence of the dealing. Butte & Boston did not sympathize in the advance to any extent, but was firm, and sold up to $11⅜, with a slight reaction, closing at $11.

Of the Lake Superior stocks Quincy took the lead, and advanced from $102 to $104, with a very fair demand, and closed at the highest price. The scrip advanced from $41½ to $43 on moderate transactions. Calumet & Hecla sold at $290, same as last week. Tamarack declined to $147 early in the week, but recovered to $150, and closed fairly strong. Osceola braced up also this week, and sold at $22, losing $½ in the final sales. The dealings in Franklin were light, with sales at $15@$14½, closing sale being $14¾. Kearsarge declined $½ to $7, with later sale of 25 shares at $7½. Atlantic sold at $10½@$11, but closed at the former figure. Wolverine was steady at $3, all the sales being at that price. Napa Quicksilver declined $¼ to $5¼ for 100 shares only.

Salt Lake City, Utah. Jan. 4.

(Special Report by James A. Pollock.)

The mining share market was not very active this week. There was some trading, but it was of a desultory sort, and but little snap and interest displayed. There is not much to be said in favor of the market, still less against it. Stocks are not much in demand, but prices are ruling steady in spite of the dullness and no weak spots were shown. The present state of the silver-lead market is having a depressing effect. Many of the mines have large ore reserves, but the margin is growing too narrow to make much of a showing of profit on a limited production, and operators consider that a big output would only be robbing the properties.

Alliance was in demand, selling at 85c., and 70c. bid for any part of 5,000 shares. Anchor remained stationary, quiet and inactive. Bullion-Beck gave indications of moving upon the declaration and payment of dividends of $25,000 on December 24th, and $25,000 December 31st, but eventually subsided, closing at the old figures of $8 bid and $9.50 asked. Cane Springs was quiet. The result of the last clean-up of the Crawford mills, a gold brick valued at $10,000, is expected in this week. Centennial-Eureka is steady at $37.50 bid and $42 asked. Comstock was offered in small blocks at 25c. There was some inquiry for Crescent. Dalton was quite active. Elko sold at 25c. Horn Silver $2.50 bid. The company paid the regular quarterly dividend of 12½c. a share on the 31st. One dollar was bid for Mammoth; the shares sold during the week at $1.15. Mercury is steady at $3.25 bid and $3.50 asked. The new mill has been started up. The removal of the mill and the doubling of the former capacity will reduce the cost per ton of ore; the shutdown of three months will delay the payment of the dividend until February 15th. Ontario is lower and was offered at the close at $11.50. Silver King is quiet.

The stock market was not entirely devoid of encouraging features. A few were apparent, but not many. I anticipate a healthier feeling next week.

San Francisco. Jan. 5.

(From our Special Correspondent.)

The new year opened with some activity in the Comstocks, which were in general strong, with an apparent tendency to advance. Trading was active for a week following the holiday season, and speculation really seems to promise an increase which we have hoped for but hardly expected. The only stock showing a decline to-day was Hale & Norcross, which went off from $1.25 to $1.10 on reports which were difficult to trace. Consolidated California sold at $3.80; Ophir, at $1.70; Best & Belcher, 97c.; Mexican, 64c.; Chollar, 52c., and Alta at 44c. Outside the Comstocks very little business is to be reported.

The bullion returns for the September quarter have been filed by the Comstock companies generally; those for the December quarter will not come in until February. The Consolidated California & Virginia shows as follows: Total ore yield 5,325 tons; gross bullion yield, $204,590; cost of extraction, $59,866; cost of transportation and reduction, $33,282; total cost, $93,149. Net yield or value on which taxes are levied, $111,441; bullion tax, $5,572.

Crown Point shows a total ore yield of 1,289 tons; gross bullion yield, $10,363; cost of extractions, $8,633; transportation, $838; reduction $2,577; total cost, $12,048. No tax.

The Sierra Nevada annual meeting has been called for January 16th.

Following is an official statement of sums disbursed to employees of Comstock mining companies for services during the month of December: Hale & Norcross, $2,244; Andes, $1,000; Consolidated California & Virginia, $10,210; Mexican, $2,029; Ophir, $3,535; Best & Belcher, $2,301; Gould & Curry, $1,387; Gould & Curry and Best & Belcher Shaft, $124; Alta (estimated), $2,100; Savage, $3,200; Justice, $1,500; Crown Point, $7,312; Yellow Jacket, $2,600; Confidence, $230; Challenge, $242; Belcher, $2,226; Segregated Belcher, $452; Chollar, $4,177; Potosi, $3,204; Union Shaft, $2,621; Ward Shaft and Bullion $1,506; Sierra Nevada, $799; Alpha and Exchequer, $767; Occidental, $900; Silver Hill, $245; West, Consolidated Virginia & California (estimated), $1,800; Nevada Mill (estimated), $2,500; Electric Light (estimated), $500; Water Company (estimated), $3,000; Quartz Mill (estimated), $10,000; total, $74,073.

Bodie Consolidated has been fairly strong selling at 75c. yesterday and 80c. to-day. Reports from the company say that small quantity of good ore is being taken from mine and stored in the bins, where several hundred tons are accumulated and in due time the ore will be crushed. The 400-ft. level of the mine is said to be looking well.

On the Pacific Stock Exchange all the old officers have been nominated for re-election at the annual meeting.

Sales of stocks at the San Francisco Stock and Bond Exchange for the year, as compared with 1893, were as follows, the figures giving the number of shares dealt in:

	1893.	1894.
January, shares	265,760	240,410
February	203,245	224,750
March	240,730	264,890
April	264,210	463,805
May	434,635	784,205
June	371,615	329,255
July	176,210	178,300
August	127,600	284,945
September	94,985	270,405
October	256,055	424,420
November	711,885	276,680
December	296,760	234,045
Totals	3,443,690	3,976,110

The increase in trading last year was thus 412,000 shares over 1893. The figures show the trading on the board only, and do not include the sales outside the regular sessions, which are almost as large as those on the board.

BY TELEGRAPH.

SAN FRANCISCO, Cal., Jan. 11.—A slight advance has taken place in the majority of the stocks. Opening prices to-day were as follows: Best & Belcher, $1.10; Bodie, 81c.; Bulwer, 13c. (assessment delinquent, 5c.); Chollar, 50c.; Consolidated California & Virginia, $4.15; Eureka Consolidated, 20c.; Gould & Curry, 47c.; Hale & Norcross, 40c.; Mexican, $1.15; Mono, 38c.; Ophir, $2.15; Savage, 55c.; Sierra Nevada, 71c.; Union Consolidated, 68c.; Yellow Jacket, 69c.

Paris. Dec. 31.

(From our Special Correspondent.)

The holiday week here interferes very much with stock trading, and the market is practically dead for the time being. The only movement I can note is an increased strength in the copper stocks, based chiefly on anticipations of better demand and stronger prices. The other shares have been dull and dealings have been very light, but perhaps not more so than is always the case at this season.

The speculation in Transvaal gold stocks continues very active, and now some of them will be dealt in here. Simmer & Jack is now quoted on the "Coulisse," and other companies are to follow very soon. The regular stock list is closed to them, however, the "agents de change" having refused to admit any of the companies except the two or three nominated some time ago. The "coulissiers," or outside brokers, however, expect much business from these stocks, which has heretofore gone to London. It is difficult to guess the amount which has gone into Transvaal companies in the last three months, but it must be very large. A great part of the stocks bought are for investment, and are locked up, so that the dividends will in part find their way here, instead of London.

Another recent attempt to place Western Australian stocks on this side of the channel is noted. They are too speculative, not to say transparently bad, for our people, and the result has been a failure so complete as almost to be ludicrous.

The Ministry came very near defeat in the Chamber last week on a railroad question, in which there is some suspicion of jobbery. The South of France Company—which you must not confound with the Southern, one of our great companies—was formed in 1885 to build some subsidiary lines, the State guaranteeing 4·5% on its capital of 75,000,000 fr. Part only of the lines have been built, at a most extravagant cost, and these have never earned the working expenses. Now a further issue of capital and a new guarantee is called for. The Chamber, after some discussion, finally passed the bill by four votes only.

The temporary agreement with Spain, under which the commerce between that country and our own is conducted on the "most favored nation" basis, expired with the year 1894. No steps have been taken so far to conclude a commercial treaty, but it is said that negotiations are to be begun, and an interpellation in the Chamber of Deputies last week was met by a request from the Government for a month's delay, which was granted.

The Bank of France has fixed the dividend for the second half of 1894 at 48 fr., making 117·50 fr. for the whole year. This is less than in 1893, when it was 124 fr. The Bank's dividends are variable; the highest points reached were 360 fr. for 1873 and 298 fr. in 1882, while in some years they have dropped below 100 fr. Last year, however, could not be considered a good one.

Our Bank continues to accumulate specie, and its gold reserve continues to grow in spite of the large payments on the Russian loan. These are not all withdrawn, however, as the Russian finance ministry will continue its policy of carrying a large balance here.

Politics—by which I do not mean our local struggles, but the international politics which affect finance—are quiet for the moment. One notes as the year closes the gradual advance of liberalism everywhere, even in slow and conservative Austria. Our Kaiser-ridden neighbors across the Rhine are growing restive under the arrogant assumptions of their young lord, and the advocates of freedom, whom Bismarck knew so well how to suppress, are making themselves heard. Even in Russia we hear of concessions from the Czar, who really seems to care for public opinion and to wish to be well thought of by his people. Whether this will last, or whether the leaders of the old regime will succeed in capturing him—or in disposing of him—we cannot say; but let us hope for the best.

Your own financial troubles are watched here with very close interest, and, you must permit me to say, with some wonder. It seems strange to us that so great and so active a people should permit their business interests to suffer while their legislators are learning the rudiments of finance. I know we have deputies ourselves of very limited intelligence; but no party here could venture for a day to trifle with the public credit. To us your way out seems very simple; it is for your government to fund its floating obligations, to withdraw its circulating notes and leave the issue of paper money where it belongs—to the banks under proper regulations. To take your treasury out of business and see that your banks are ready to redeem their notes in coin—that is all you need. Until you do that, you will have trouble. That is the universal opinion here. Doubtless your business men see it, but why do they not do more to impress their views upon your legislators?

As the year closes, I must hope that for you, as for us, the time of liquidation is drawing to a close, and must wish you for 1895 the prosperity which 1894 has been so reluctant to bring. AZOTE.

DIVIDENDS.

Bangkok-Cora-Bell Mining Company, dividend of 1c. per share ($6,000 in all), payable January 15th, at the office in Denver, Colo.

Central Railroad of New Jersey, 1¾%, quarterly, payable February 1st. Transfer books close January 15th, and reopen February 1st.

Delaware, Lackawanna & Western Railroad Company, 1¾%, quarterly, payable January 21st. Transfer books are closed from January 3d to January 22d.

Forepaugh Mining Company dividend of 10c. per share, $16,000, payable January 10th at the office of the company, 1007 Opera House Block, Chicago, Ill.

Mollie Gibson Consolidated Mining and Milling Company dividend No. 44 of 5c. per share, $50,000, payable January 25th at the office of the company in Colorado Springs, Colo. Transfer books close January 18th and reopen January 26th.

MEETINGS.

Aurora Iron Mining Company, at the office of the company, in Milwaukee, Wis., January 15th, at 10 a. m.

Chihuahua Mining Company, at the office of the company, in New York City, January 14th, at 12 o'clock, noon.

Lone Star Quartz and Gravel Mining Company, at the office of the company, No. 2814 Sacramento street, San Francisco, Cal., January 19th, at 2 p. m.

Minas Prietas Mining Company, at the office of the company, in New York City, January 17th, at 12 o'clock, noon.

MINING STOCK QUOTATIONS.

NEW YORK MINING STOCKS.

NAME OF COMPANY.	Par val.	Jan. 5. H.	Jan. 5. L.	Jan. 7. H.	Jan. 7. L.	Jan. 8. H.	Jan. 8. L.	Jan. 9. H.	Jan. 9. L.	Jan. 10. H.	Jan. 10. L.	Jan. 11. H.	Jan. 11. L.	Sales.
Alta						.46								200
Belcher, Nev	100													
Belle Isle, Nev	100													
Best & Belcher, Nev.	100							1.10				1.20	1.15	300
Bodie Cons., Cal.	100													
Bulwer, Cal.	100							.09	.08					200
Brunswick, Cal.	5													
Choltar, Nev.	100									.51				300
Comstock scrip., Nev.														
do. T. bonds do.														
do T. stock do.	100	.06				.07								500
Cons Cal. & Va., do.	100			3.35		3.45				3.95		4.40	4.25	590
Crown Point, do.	100													
El Curlsto, R. of Col.	2													
Gould & Curry, do.	100							.5[illegible]				.51		300
Hale & Norcross, Nev.	100	1.25												100
Homestake, Dak.	100			18.00										100
Horn Silver, Utah	25							2.50						300
Lacrosse, Colo	50													
Leadville Cons., Colo.	10													
Little Chief	50													
Mexican, Nev.	100	.95						1.00		1.10				300
Mono, Cal.	100													
Nevada Queen, Nev	100													
Ontario, Utah	100													
Ophir, Nev.	100									2.10				400
Phoenix of Ariz	100													
Plymouth, Cal.	50											.25		200
Potosi, Nev.	100													
Quick S., com., Cal.	100													
do. pref. do.	100													
Savage, Nev	100													
Scorpion, Nev.														
Sierra Nevada, Nev.	100	.80												100
Standard Cons., Cal.	100					2.00				2.00		2.00		600
Union Cons., Nev.	100	.60												
Utah, Nev	100													
Victor, Colo.	5													
Yellow Jacket, Nev.	100					.44				.48				300

Total shares sold, 4,490.

INDUSTRIAL AND TRUST STOCKS.

NAME OF COMPANY.	Par value.	Jan. 5. H.	Jan. 5. L.	Jan. 7. H.	Jan. 7. L.	Jan 8. H.	Jan 8. L.	Jan. 9. H.	Jan. 9. L.	Jan. 10. H.	Jan. 10. L.	Jan. 11. H.	Jan. 11. L.	Sales.
Adams Exp.	100	141½	.....	141½	141	..	..	..	..	141	....	....	....	35
Am. Cot Oil.	100	23¾	.....	.....	.....	23½	23	23¾	23¼	23¼	....	23½	23¾	1,050
do. pref.	100	.....	.....	.....	.....	67	.....	68¼	.....	.....	....	.....	.....	54
Am. Expr.	100	111	.....	.....	.....	113	112	113	111	.....	....	.....	.....	160
Am. Sug. Rf.	100	85¾	86⅞	85¾	86⅜	88¼	87⅝	90¾	87¼	90⅝	89¾	91	90¼	174,950
do. pref.	100	91¾	91	91¾	9.¾	90¾	.....	91¾	.....	91¾	.....	91¾	91⅛	2,767
Edis. E. I. Co.	100	.....	.....	.....	.....	.....	.....	.....	.....	99	.....	.....	.....	100
Edis Gen. El	100	34	33¾	34¼	34⅜	34⅜	34⅛	34⅜	34¼	35¾	34¼	34⅝	33⅝	17,231
Nat. Lead Co	100	37	36	36¾	36½	37¼	36⅝	37¼	36¾	37¼	36¾	37¼	37	4,728
do. pref.	100	84¾	84¾	84	83⅜	84⅝	84	.....	.....	84¾	84½	.....	.....	2,500
Nat. Lbs. Oil.	100	.....	.....	14¾	.....	.....	.....	.....	.....	12¾	.....	.....	.....	300
U.S. Cord. Co.	100	6¾	.....	7¾	...	7½	7½	8	7¾	7½	6½	7½	6¾	3,180
do. pref.	100	11½	.....	.....	.....	13½	12	13⅝	.....	10¾	9½	10¾	.....	2,710
do. gtd.	100	20	.....	20½	.....	21¾	.....	.....	.....	20½	20	.....	.....	1,265
U. S. Expr'ss	100	...	.....	.....	.....	.....	.....	.....	.....	44½	.....	.....	.....	50
U.S. Rubber	100	44¼	44⅛	44	..	44⅜	44¼	45	44⅜	44¼	.....	44¼	44⅛	3,070
do. pref.	100	93⅝	93⅝	93⅜	.....	.....	.....	94⅜	.....	94⅜	.....	.....	.....	366
Wells, Fa Ex	100	.....	.....	.....	.....	.....	.....	108	106	.....	.....	.....	.....	75
West. Union	100	87	86⅝	87¼	86⅝	87⅜	87⅛	87⅜	87¼	87⅜	87¼	87⅜	87	8,224
*Westingh'se Air Brake	50	†123⅝	.....	.....	.....	†123⅝	.....	.....	.....	.....	.....	.....	.....	.....

† Bid. * Pittsburg quotations. Total shares sold, 222,919.

ASPEN, COLO. Jan. 5, 1895.

NAME OF COMPANY.	Location.		Par value.	Latest actual selling price.	Bid.	Asked.
Alta Argent				$0.02	$0.09	$0.10
Argentum Juniata	Aspen,	Colo	$2.00	.94	.93	.94
Aspen Contact	"	"	5.00	.40	....	.40
Aspen Deep Mining	"	"	1.00	.05	.05	.05½
Best Friend	"	"	1.00	.05	....	.05
Bi-carbonate	"	"	1.00	.05	.....	.04
Buse whacker	"	"	1.00	.10	.09	.10
Caverhill Cons	"	"	1.00	.14	.14	.15
Del'a S	"	"	5.00	.....	.....	.....
Gold Valley Placer	Routt Co.,	"	1.00	.10	.....	.10
Little Annie	Aspen,	"	1.00	.03½	.....	.04
Mollie Gibson	"	"	5.00	1.45½	1.40	1.47½
Old Colony Gold	Taylor River,	"	1.00	.75	.....	.75
Pontiac	Aspen,	"	1.00	.03	.....	.....
Sheep Mt. T & M	Crystal,	"	1.00	.25	....	.25
Smuggler	Aspen,	"	1.00	2.20	2.15	2.40
West Aspen Min	"	"	1.00	.....	.....	.10

San Francisco, Cal.

NAME OF COMPANY	Par value	Closing Quotations Jan. 4	Jan. 5.	Jan. 7	Jan. 8	Jan. 9.	Jan. 10.
Alpha							
Alta				.48	.49	.50	.49
Belcher				.69	.65	.64	.60
Belle Isle							
B. & Belch				.95	.96	.99	1.05
Bodie				.85	.82	.80	.80
Bulwer				.05	.06	.09	
Choltar				.45	.45	.47	.47
Com'w'lth							
Con. C. & V.				3.65	3.65	3.50	4.00
Con. Pac.							
Crown Pt.				.68	.63	.63	.60
Del Monte							
E'reka Con							
G'ld & C'y				.42	.42	.41	.44
Hale & N.				.92	.95	1.05	1.05
M. White							
Mexican				.92	.92	.99	1.00
Mono				.24	.28	.24	.30
Mt. Diablo							
Navajo							
Nev. Qu'n							
N. B'lleIsle							
N. O'w'th							
Opur				1.60	1.60	1.65	2.05
Potosi				.32	.33	.33	.34
Savage				.52	.52	.53	.53
Sierra Nev				.65	.60	.64	.68
Unf'n Con				.61	.60	.64	.65
Utah				.08	.08	.05	.06
Yel. Jack				.41	.39	.49	.48

Baltimore, Md. Jan. 10.

	Par.	Price.	Bid.	Asked
Atl. Coal, W. Va.	$10	....	$50.00	....
Bit. & N. C., N.C.	5	....	....	$0.02
B'lt. M. & S., N.C.		....	....	.02
Big Vein C., Md.	10	....	....	....
Conr. Hill, N.C.	5	....	....	.04
Con. G. & C., N.C.	5	....	....	.02
Cons. Coal, Md.	100	....	30.00	31.50
Ga. C. Coal, Md.	100	....	108.00	115.00
Gt. Rep'b., Colo.	5	....	....	.02
How. C. & C., Md.	5	....	1.10	1.20
Lake Chr., Md.	5	....	....	.10
Newb. O. C'l, Md.	25	....	....	....
N. State (Balt.), N. C.	5	....	....	.10
Ore Knob, Md.	10	....	....	.05
Silv. Val., N. C.	5	....	....	.20
Ver. M. Co., Md.	5	....	....	.20

Duluth, Minn. Jan. 7.

	Par.	Price.	Bid.	Ask'd.
Adams Iron Co.	10	....	$2.00	$2.50
Biwabik M. I. Co.	100	17.00	17.00	18.00
Chandler Ir. Co.	25	....	....	27.00
Clev. Cliffs I. Co.	100	....	25.00	32.00
Gr't No. M. Co.	100	....	1.75	2.00
Gr't West. M. Co.	100	....	1.00	1.50
Jackson Iron Co.	25	....	....	60.00
L. Sup. C. Ir. M.	100	8.50	8.50	8.60
L. Sup. (Marq'te)	25	....	17.00	20.00
Mes. C., L. & E. Co.	10	5.00	....	4.00
Mes. Chief I. Co.	100	1.25	1.00	1.50
Mes. Mt. Ir. Co.	100	14.25	14.50	16.00
Met. L. & I. Co.	25	....	....	60.00
Minnesota Ir. Co.	100	40.00	40.00	55.00
Mountain Ir. Co.	100	41.50	....	....
Ohio Mining Co.	100	4.00	4.00	5.00
Pioneer Iron Co.	25	....	.25	1.00
Pitts. & L. A. Co.	100	....	55.00	62.00
Sec'ty L. & E. Co.	10	14.00	15.00	18.00

Philadelphia, Pa. Jan. 10.

	Par.	Bid.	Asked.
Blooming. C. & C. Co.	$50	....	.....
Cambria Iron Co.	50	$50	$50¼
Connellsville Gas Co.	10	....	.....
Central C. & C. Co	100	....	.....
do. pref.	100	....	85
Locust Mt. C. & I. Co.	50	....	.....
North Liberties Gas.	25	....	35
Penn. Nat. Gas.	..	.	*9½
Penn. Salt Co.	50	95	100
Penn. Steel Co.	100	....	.....
Penn. Gas Coal Co.	50	....	42½
Westmoreland Coal.	50	....	*50¼
Wyoming Valley Co.	100	...	.....

* Last actual selling price.

COAL AND COAL RAILROAD STOCKS.

NAME OF COMPANY.	Par value.	Jan. 5. H.	Jan. 5. L.	Jan. 7. H.	Jan. 7. L.	Jan. 8. H.	Jan. 8. L.	Jan. 9. H.	Jan. 9. L.	Jan. 10. H.	Jan. 10. L.	Jan. 11. H.	Jan. 11. L.	Sales
Am. Coal	25													
Balt. & Ohio.	100	63	61¾	61¾	.....	62	.....	62¾	61⅝	63	.....	63⅛	.....	2,567
do. pref	100													
Buff., R. & P.	100													
do. pref.	100													
Ches. & Ohio.	100	17⅝	17½	17¾	17⅜	17½	17⅜	17⅝	17¼	.....	.....	17½	....	8,899
do. 1st pref.	100													
Col. C. & I.	100	4	4	.....	.....	.....	.....	.....	.....	4	.....	.....	.....	250
Col. Coal														
Col. Fuel	100													
do. pref.	100													
Col., H. V. & Tol	100	16¾	.....							17¾	17			1,910
do. pfd	100		.....	57½	.....			55	.....	60	58	.....	.....	438
Col. & H. Coal	100									49¾				100
do. pfd.	100													
Cons. Coal	100													
Del. & Hud. C	100	.....	.....	126¾	126	126¾	.....	126¾	126¾	129	128	131⅝	128½	8,784
Del., L. & W	50	.....	.....	159	158⅜	160	159	161½	160⅝	161½	.....	161¾	.....	1,111
Hunt. & Br. T.	50	.....	.....			35	34½	35⅝						93
do. pref.	50	53	.....	53	.....			53	.....					19
Lake Erie & W	100	16	.....											100
do. pref.	100	40½	.....					42	.....			51¾	.....	339
Lehigh C. & N.	50	49¾	49¾	49	.....	49⅝	49⅛	49	.....					191
Lehigh Val.	50	.....	.....	34¾	.....	34⅞	34⅜	34⅜	34⅛	.....	.....	.....	.....	978
Lehigh & W. B.	50													
Maryl'd C. prf.	100	.....	.....	.....	.....	50	.....	.....	.....	.....	.....	.....	.....	135
Morris & Es'x.	100	.....	.....	.....	.....	162¾	.....	.....	.....	163½	.....	.....	.....	315
New Ct. Coal.	50													
N. J. Central.	100	87	85⅝	90½	86¼	91¼	90	91	90	91¾	90⅜	92¾	90¼	39,969
N. Y., L. & W.	100	.....	.....	.....	.....	117	116¾	.....	.....	117	116⅝	.....	.....	63
N. Y., L. E. & W	100	.....	.....	10¾	10	.....	.....	10	.....	.....	.....	10¾	.....	900
do. pref.	100	.....	.....	.....	.....	2⅜	.....	21½	.....	.....	.....	.....	.....	200
N. Y., Susq. & W	100	.....	.....	14½	.....	14⅜	.....	14⅜	.....	.....	.....	.....	.....	60
do. pref.	100	.....	.....	40¾	40¼	40½	40	41¼	40⅜	.....	42	41¾	.....	1,610
N. & West.	50	5⅝	.....	.....	.....	5¾	.....	5⅝	.....	5¼	5¼	.....	.....	1,832
do. pref.	50	.....	.....	.....	.....	18	.....	.....	.....	.....	.....	.....	.....	40
Penn. Coal	50	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Penn. R. R.	50	50⅝	50¾	51	50¼	50¾	50¼	50¾	50¾	.....	.....	.....	.....	3,185
Phil. & Read.	50	12¾	12¾	12¾	.....	13¼	13	13⅛	13	13¼	.....	13¼	13¼	11,330
Penn. C. & I.	100	15¾	.....	15	14¼	15¼	15	.....	.....	14¼	14¼	15¼	14¾	2,466
do. pref.	100	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Wheel. & L. E	100	11	...	10¾	10¾	10¾	...	.....	.....	10¼	10	10¼	10¼	3,200
do. pref.	100	.....	.....	.....	.....	.....	.....	.....	.....	41½	.....	41½	.....	300

Total shares sold, 76,483.

BOSTON MINING STOCKS.

NAME OF COMPANY.	Par val.	Jan. 4. H.	Jan. 4. L.	Jan. 5. H.	Jan. 5. L.	Jan 7. H.	Jan 7. L.	Jan. 8. H.	Jan. 8. L.	Jan. 9. H.	Jan. 9. L.	Jan. 10. H.	Jan. 10. L.	Sales.
Allouez, Mich.	25													
Atlantic, Mich.	25					11.00						10.50		57
Bost & Mont., Mont.	25	34.75	34.12	34.50	34.37	36.50	34.75			35.50	34.87	35.50	35.25	5,871
Butte & Bost., Mont.	25					11.37				11.37		11.00		950
Cal. & Hecla, Mich.	25	290		290		290				290				21
Centennial, Mich.	25													
Central, Mich.	10													
Franklin, Mich.	25	15.00				14.50								15
Kearsarge, Mich.	25													
Lake Superior, Mich.														
Minnesota Ir., Minn.														
Napa Quicksilver, Cal	2													
Osceola, Mich.	25	21.50				22.00	21.50			21.50				454
Quincy, Mich.	25	103		103½		104				103		104	103½	126
do scrip		42.00	41.50			42.00						43.00		150
Tamarack, Mich.	25			150	145	150				150		150		32
Tamarack, Jr., Mich.	25													
Wolverine, Mich.	25	3.00		3.00		3.00								650

Total shares sold, 8,321.

COLORADO SPRINGS COLO †

NAME OF COMPANY	Par value.	Dec. 31. H.	Dec. 31. L.	Jan. 1. H.	Jan. 1. L.	Jan. 2. H.	Jan. 2. L.	Jan. 3. H.	Jan. 3. L.	Jan 4. H.	Jan 4. L	Jan. 5. H.	Jan. 5. L.	Sales.
Alamo	$1					.01⅜						.0 8¼		9,000
Argent'm, J						.94¼	.92	1.01	.97½	1.00	.97	.98½	.94	13,725
Bob Lee												.06.65		5,000
Cripple C C	1							.01½		.01½				9,000
C. O. D.	1							.03¼						1,000
Cr. & C. C.	1					.01⅝		.0.⅝		.01⅝				25,000
Fanny R.	1					.07½		.07						9,400
Gold & Gi.	1					.06¾		.07		.07½		08		4,000
Golden Age	1					.01		.01						5,500
Isabella	1					.15½		.15						1,005
Mollie G.	5					1.67½		1.66¼	1.65	1.64½	1.55	1.50	1.47½	4,650
Mt. Rosa	1					.03¾	.03½	.03⅝	.03½	.03⅝				8,900
Pharma	1					.04¼	.04	.04		.04		.04¼	.04	50,700
Portland	1							.39						4,150
Specimen	1					.03¾		.04						3,000
Summit	1									.10		.10	.09¾	3,500
Union	1					.10¼		.10¼	.09¾	.09¼		.08¾	.08¾	19,000
Work	1							.02¾		.03	.02⅞	.03⅜		41,500

† Official quotations of Colo. Mg. Stock Ass. Total shrs. sold, 218,050.

Pittsburg, Pa. Jan. 10.

	Par.	Price.	Bid.	Asked.
GAS STOCKS:				
Allegheny	$100	....	$49¾	$51½
Chartiers Val.	100	....	....	9
Ohio Valley	50	....	....	38
People's Nat.	50	....	33½	36
" N. G.				
& P.	25	13	13	13¾
Pennsylvania.	50	....	9	....
Phila. Co.	50	18⅜	18¼	18½
Wheeling	25	22	21	22
COAL STOCKS.				
N. Y. & Cl. G. C.	50	....	....	46
MINING STOCKS:				
Lustre	10	12¼	11⅛	13
OIL CO. STOCKS:				
Washington	50	....	....	50

Denver, Colo. Jan. 5.

	Par.	High.	Low.	Sales.
Amity	....	.099	.0085	12,000
Anaconda	....	.23	.22½	6,000
Bangkok	....	.19½	.19	23,500
Big Six	....	.10	.09½	20,400
Boston-Id	....	.16	.15	27,000
Fannie R.	....	.07	.07	.....
Faupaugh	....	.70	.60	.....
Gold S.	....	.03⅜	.02½	27,000
Gold & Globe.	....	.07½	.07	20,000
Justice	....	.03¼	.03⅛	18,900
Mt. Rosa	....	.03⅜	.03½	2,000
Pharma	....	.04⅛	.04	12,700
Work	....	.03	.02⅜	39,700
Total shares sold				209,200

London, England. Dec. 18.

(From our Special Correspondent.)

	Par £	Par s.	Par d.	Buyer. £	Buyer. s.	Buyer. d.	Seller. £	Seller. s.	Seller. d.
Al'ska Mex., Al.	1	0	0	1	0	0	1	5	0
Al'ka-Tr'dwell, Alaska	5	0	0	3	0	0	3	2	6
Alma, & T., Mex		2	6			1½			4½
Am. Belle, Col.	1	0	0		1	3		1	9
De Lamar, Id.	1	0	0	1	6	0	1	6	6
E. K'tenay Ex., B. C.					11	3		13	9
Elkhorn, Mont	1	0	0		11	6		12	6
Emma, Utah		5	0			6			9
G. Feather, Cal	1	0	0		6	0		7	0
Golden G., Cal.	1	0	0		4	0		5	0
G Leaf, Mont. & N. M.	1	0	0		2	6		3	0
Harqua H., Ari	1	0	0		7	0		7	6
Holc'b Val., Cal		5	0			9		1	0
Jay H'k & Lone Pine, Mont.	1	0	0		3	6		4	6
La Yesca, Mex	1	0	0		1	9		2	3
N. Guston, Col	1	0	0		11	3		13	9
N. Mont., Mont	1	0	0		12	9		13	3
Palmarejo		.....			1	6		1	9
Pin. Alt., Mex.	1	0	0		6	0		7	0
Pi. Alt., Mex., P	1	0	0		12	6		17	6
Pl. Eureka, Cal					11	3		13	9
Poorman C., Id		5	0		1	6		1	9
Rich. C... Nev.	5	0	0		8	9		11	3
Sier. But., Cal	2	0	0		10	0		12	6
Springd. G., Col		4	0		1	9		2	3
Twin L. Placers, Colo.		.....		1	5	0	1	7	6
Un. Mex., Mex.	1	0	0		1	3		1	9

MONTANA STOCKS.

(Special Report by Samuel K. Davis.) HELENA, Dec. 17, 1894.

STOCKS.	Location	Co.'s office	Par val.	Bid.	Asked.	Shrs. sold.	Price	Date.
Alice	Silv.Bow Co, Mont.	Butte, Mont.	$25	$0.35	$0.40			
Am. Dvp. Co..	Mont "	Butte, "	1	2.75	3.50	500	$3.00	Dec. 3
Bald Butte	L.& C'k'eCo.,Mont.	Helena "	1	3.75	4.00			
Benton Group	Neihart "	W.Sph. S.Mont.	5	.10	.15			
Bi-Metallic	Granite Co. "	St. Louis, Mo.	25	4.50	5.50			
Combination	" " "	Helena, Mont.	10	.60	.65			
D. Eagle (S. H.)	Fergus Co., "	Chicago, Ill.	1	.75	1.00			
De Lamar	Idaho	London, Eng.	£1	£1 5s. 6d.	£1 6s. 6d.			
Elizabeth	Granite Co., Mont.	St. Louis, Mo.	$10	.20	.25			
Granite Mt.	" " "	" " "	25	2.75	3.75			
Hope	" " "	" " "	10	2.75	3.00			
Hope	B.JeffersonCo "	Helena, Mont.	5					
Hel'a & Frisco	Shoshone Co , Id.	" "	5					
Iron Mountain	Missoula Co.,Mont.	" "	10	.45	.50	4,000	.45	D'c 4,14
Ontario	DeerLodgeCo. "	Helena, Mont.	1	1 00	1.25			
Poorm'n (Coeur d'Alene)	Shoshone Co., Id.	Butte "	10	.20	25			

Shanghai, China. Nov. 30.

Name of Co.	Par.	Last div.	Price.
Jelebu Mg Co.	$5	$0 25	Tls. 3·10
Punj. Mg. Co.	4		" 3·28
do, pref.	1		" 1·10
Raub A'lianG.	£1	10½d.	" 3·65
Sheridan Con. Mg. Co.	Tls. 100		" 1·00

ASSESSMENTS.

COMPANY.	No.	Dlnqt.	Sale.	Am't.
Alta, Nev.	48	Jan. 3	Jan. 24	
Equitable, S. Dak.	6	Dec. 22	Jan. 15	.00[illegible]¼
Grizzley, Utah.		Dec. 17		.11
Hale & Norc., Nev.	106	Dec. 29	Jan. 23	.25
Hart'yCon.,Cal	18	Jan. 12	Feb. 2	.02
Mexican, Nev.	51	Jan. 8	Jan. 29	.25
Ophir, Nev.	64	Jan. 14	Feb. 4	.25
Potosi, Nev.	43	Jan. 14	Feb. 5	.25
St. John, Cal.	14	Jan. 11	Jan. 26	.05
Savage, Nev.	85	Jan. 7	Jan. 28	.20
SilverHill,Nev.	34	Dec. 23	Jan. 16	.05
Siskiyou Con., Cal.	9	Jan. 3	Jan. 25	.01
S. Eureka, Cal.	15	Dec. 17	Jan. 14	.01
Starlight, Nev.	4	Dec. 31	Jan. 21	.15
Summit, Cal.	13	Dec. 26	Jan. 15	.03
Un'n Con.,Nev.	50	Dec. 27	Jan. 16	.20
Yellow Jacket, Nev.	58	Jan. 15	Feb. 20	.25

Salt Lake City, Utah.

Jan. 5.

(Special Report by James A. Pollock.)

	Par val.	Bid.	Asked.	Sales.
Ajax	$5		$2.50	
Alliance	1	$0.70	1.00	$0.85
Anchor	20	3.25	3 50	3.50
Apex	10		0.10	
Bogan	1	0.75	1.25	1.25
Bull.-B. and Champ'n.	10	8.00	9.50	9.55
Cane Spr'gs		0.50	1.00	1.00
Cent.E'reka	50	37.50	42	42
Cleve. Con.	1		0.50	0.50
Comstock	25	0.15	0.25	
Crescent	25	0 02½	0.06	0.05
Dalton	5	0.02½	0.03½	0.03
Daly	20	7.00	8.00	8.00
Daly West	20	5	6.00	5.00
Elko	2½		.25	.25
Eureka Hill	100		125.00	
Horn Silver	25	2.60	3.00	2.85
Little Pittsb	5		0.25	0.25
Lucky Bill.	10		.50	
Mammoth.	25	1	1.25	1.15
Mecars	25	.50	1.00	.85
Mercur	25	3.25	3.50	3 40
New Tintic.	5		3.00	
Niagara	10		2.50	
No. Eureka	1		0.10	0.10
North. Spy			2.50	
Ontario	100	9.00	11.50	11 00
Silver King	20	12	14.00	13.50
Silver Spar.	5		1.00	1.00
Tetro	1		0.25	.25
Utah	1		1.00	

All the above companies are located in Utah.

PARIS. Week ending Dec. 29.

NAME OF COMPANY.	Country.	Product.	Par value.	Divs. last year.	Prices. Op'ning.	Closing.
			Fr.	Fr	Fr.	Fr.
Acieries de Creusot	France	Steel manufrs.	2,000	100.00	2,090.00	2,090.00
" " Firminy	"	" "	500	85.00	1,800.00	1,802.50
" " Fives-Lille	"	" "	500	35.00	660.00	660.00
" " la Marine	"	" "	500	30.00	835.00	832.50
Aguas Tenidas	Spain	Iron pyrites	500	40.00	519 00	505.00
Boleo	Lower Calif'nia	Copper	500		510.00	510 00
Bruay	France	Coal	400	600	14,800.00	14,800.00
Callao	Venezuela	Gold	125		14.75	14.00
Cape Copper	S. Africa	Copper	50	1.50	39 50	40.50
Champ d'Or	"	Gold	25		87.50	95.50
Courrieres	France	Coal	300	150.00	4,210.00	4,200.00
De Beers Consolidated	S. Africa	Diamonds	125	15.64	468.75	470.75
Dombrowa	Russia	Coal	500		445.00	480.00
Dynamite Francaise	France	Explosives	500	25 00	735.00	745.00
Huanchaca	B livia	Silver	125	5.00	175.50	157.50
Jerez-Lauteira	Spain	Copper			6.00	6.70
Kebao	Tonquin	Coal	500		595.00	582.50
Laurium	Greece	Zinc and lead	500	40.00	546.00	555.00
Malfidano	Italy	Zinc	500	52.50	990.00	990.00
Metaux, Cie. Fran. de	France	Metal dealers	500	87.50	272.50	275 00
Mokta-el-Hadid	Algeria	Iron	500	40.00	775.00	750.00
Nickel	New Caledonia	Nickel	500	30.00	394.00	405.00
Rio Tinto	Spain	Copper	250	17 50	345.00	341.50
Robinson	S. Africa	Gold	125	12.50	196.50	202.50
Saint Elie	French Guiana	"	25		15.00	15.00
Soufres Roumaines	Italy	Sulphur			202.50	200.00
Tharsis	Spain	Copper	50	6.25	117.50	118 00
Vielle Montagne	Belgium	Zinc	80	30.00	473.00	467.50

MEXICO. Week Ending Jan. 3.

NAME OF COMPANY.	State.	No. of shares.	Last dividend.	Last assessment.	Prices. Opening.	Closing.
Asturiana y Anexas	Zacatecas	2,500			$5.50	$5.50
Cerro Colorado	Chihuahua	15,000			40	42
Concepcion y Anexas	S. Luis Potosi	2,500			3 0	275
El Oro	Guanajuato	500			135	140
do. pref	"	2,000		$0.02	135	130
Huautla Sta. Ana	Morelos	4,000	$1.50		100	100
Luz de Berda	Michoacan	3,000		0.50	5	5
do. Free stock	"	1,000			5	5
Luz de Maravillas	Hidalgo	1,100			400	400
Purisima de los Con.	Zacatecas	2 4 0			50	50
Real del Monte	Hidalgo	2,554	30.00		1,300	1,320
Rosario y Anexas	Chihuahua	4,000			100	100
do. pref	"	2,000			40	40
San Rafael del Oro	Guanajuato	3,000			175	175
Sta. Gertr. y Anexas	Hidalgo	28,800		1.50	77	73
do. free stock	"	9,600		0 50	18	13
Ste. Maria de la Paz	S. Luis Potosi	2,400			100	100
Tapuzinco	Puebla	2,400			30	30
Ventura y Anexas	S. Luis Potosi	2,400		0 40	10	10
Zomelahuacan (gold)	Vera Cruz	5,000			100	100

NOTE.—In most Mexican mining companies the shares have no fixed par value. The capital is formed of a certain number of shares, the total value not being named. Prices are in Mexican dollars.

CURRENT PRICES.

These quotations are for wholesale lots in New York unless otherwise specified.

Acid—Acetic, chem. pure .17@.19
Commercial, in bbls. and cbys. .01¼@.02
Carbonic, liquefied, ₩ lb. .18@.25
Chromic, chem pure, ₩ lb. 1.00
for batteries .40
Hyarobromic, dilute, U. S. P. .25@.30
Hydrocyanic, U. S. P. .45@.50
Hydrofluoric .20@.30
Alcohol—95%, ₩ gall. $2.30@$2.40
Absolute $3.80
Ammoniated $2.80
Alum—Lump, ₩ cwt. $1.75@$1.85
Ground, ₩ cwt. $1.85@$1.90
Powdered, ₩ lb. .04½@.05
Lump ₩ ton, Liverpool £5
Aluminum Chloride—Pure, ₩ lb. $1.25
Amalgamating solution, ₩ lb. .60
Sulphate, ₩ cwt $1.90@$2.50
Ammonia—Sal., in bbl. lots, ₩ lb. .07½@.08
Carbonate, ₩ lb., English and German, .07½@.08
Muriate, white, in bbls., ₩ lb. .08½@
Aqua Ammonia—(in cbys) 8° ₩ lb. .03@.04
20°, ₩ lb. .04@.05
26°, ₩ lb. .04¾@.05
Antimony—Oxymur, ₩ lb. .04@.06
Regulus, ₩ lb. .10@.11¼
Argols—Red, powdered, ₩ lb. .15
Arsenic—White, powdered ₩ lb. .03@.03¼
Red ₩ lb. .065@.07
Yellow .08@.09
White at Plymouth, ₩ ton £12 2 6
Asbestos—Canadian, ₩ ton $15@$120
Italian, ₩ ton, c. i. f. L'pool £18@£60
Ashes—Pot, 1st sorts, ₩ lb. 4.75@5
Pearl .05¾@.06¼
Asphaltum—
Prime Cuban, ₩ lb. .04@.05
Hard Cuban, ₩ ton $28.00@$30.00
Trinidad, refined, ₩ ton $30.00@$35.00
Egyptian and Syrian, ₩ lb. .05@.07½
Californian, at mine, ₩ ton $12.00@$26.00
at San Francisco, ₩ ton $15.00@$29.00
Barium—Carbonate, pure, ₩ lb. .45
Carbonate, commercial, ₩ lb. .05@.10
Chlorate, crystal, ₩ lb. .75
Chloride, commercial, ₩ lb. .05@.10
pure, ₩ lb. .16
Iodide, ₩ oz. .40
Nitrate, ₩ lb. .06½@.07
Sulph., Am. prime white, ₩ ton $17.50@$19
Sulph., foreign, floated, ₩ ton $21@$24
Sulph., off color, ₩ ton $11.50@$15.00
Carb., lump, f. o. b. L'pool, ₩ ton £6
No. 1, Casks, Runcorn, " £4 10 0
No. 2, bags. Runcorn, " £3 15 0
Bauxite—₩ ton $5 @ $6
Bichromate of Potash—Scotch, ₩ lb. .11@.12
American, ₩ lb. .11@.12
Bichromate of Soda—₩ lb. .09¼@.10
Borax—Refined. ₩ lb., in car lots .08@.09
San Francisco .08@.08½
Concentrated, in car lots .07½@.08
Refined, Liverpool ₩ ton 22
Bromine—₩ lb. .25@.35
Cadmium Mixture—₩ lb. $2.00
Cadmium Iodide—₩ lb. $5
Chalk—₩ ton $1.50@$2.25
Precipitated, ₩ lb. .04@.0
China Clay—English, ₩ ton $13@$18.00
Domestic, ₩ ton $9@$11
Chlorine Water—₩ lb. .10
Chrome Yellow—₩ lb. .10@.25
Chrome Iron Ore—₩ ton, San Francisco $10.00
Chromalum—Pure, ₩ lb. .35@.40
Commercial, ₩ lb. .02½
Cobalt—Oxide, ₩ lb. $1.60@$1.70
Copper—Sulph. English Wks. ton £20@£21
Vitriol (blue), ordinary, ₩ lb. 03¼@.03¾
" extra .04½
Nitrate, ₩ lb. .40
Copperas—Common, ₩ 100 lbs. .35@.95
Best, ₩ 100 lbs. $1.35@$1.50
Liverpool, ₩ ton, in casks £2@£2 10s.
Corundum—Powdered, ₩ lb. .04¼@.09
Flour, ₩ lb. .03
Cryolite—Pow., ₩ lb., bbl. lots .07@.08
Cyanide, Potassium—85 to 90%, ₩ lb. .50
No. 0, 67%, ₩ lb. .40
No. 1, 52 to 55%, ₩ lb. .36
No. 2, 40 to 45%, " .30
No. 3, Mining cyanide, per lb .28
No. 4, " " 30 to 35%, ₩ lb. .22
Emery—Grain, ₩ lb. (₩ kg.) .04½@.05
Flour, ₩ lb. .02½@.04
Epsom Salt—₩ lb. 01@.01½
Feldspar—Ground, ₩ ton .$6.00@$10.00
Crude $2.00@$3.00
Fluorspar—Powdrd, No. 1, ₩ ton $20@$30
Lump, at mine $6@$8
French Chalk—
Fuller's Earth—Lump, ₩ ton. $16@$20
Glauber's Salt—in bbls., ₩ lb. .01@.01½
Glass—Ground, ₩ lb .09@.10
Gold—Chloride, pure, crystals, ₩ oz. $12.00
pure, 15 gr., c. v., ₩ doz. $5.40
liquid, 15 gr., s. v., ₩ doz. $5.50
Chloride and sodium, ₩ oz $6.00
15 gr., c. v., ₩ doz. $2.75
Oxide, ₩ oz. $27.25
Gypsum—Calcined, ₩ bbl. $1.25@$1.50
Land Plaster
Iodine—Resublimed, ₩ oz. .30@ 33
Iridium—Oxide ₩ lb. $90
Iron—Nitrate, 40°, ₩ lb. .01@.01½
47°, ₩ lb. .02@.02½
Kaolin—*See China Clay.*
Kieserite—₩ ton $9@$10
Lead—Red, American, ₩ lb. .06¾@.07¼
White, American, in oil, ₩ lb. .06¾@.07¼
White, English, ₩ lb., in oil .08¼@.08¾
Acetate, or sugar of, white .06@.06¾
Granulated
Nitrate .09@.12
Lime Acetate—Am. Brown .90@.95
" Gray $1.75@$1.87½
Litharge—Powdered, ₩ lb. .05¼@.07¼
English flake, ₩ lb. .06@.09½
Magnesite—Crude, ₩ ton of 1,015 kilos $14.75
Calcined, ₩ ton of 2,240 lbs. $22.00
Brick, ₩ ton of 2,240 lbs. $47.50
Manganese—Ore, per unit. 23@.28
Oxide, ground, ₩ lb. .02½@.06¾
Mercuric Chloride—(*Corrosive Sublimate*) ₩ lb. .72@.84
Powdered ₩ lb. .6
Marble Dust—₩ bbl. $1.25@$1.50
Metallic Paint—Brown ₩ ton. $20@$25
Red $20@$25
Mica—In sheets according to size.
1st quality, ₩ lb. .25@$6.00
Mineral Wool—Ordinary slag .01¼
Ordinary rock .02¼
Ground, ₩ ton
Naphtha—Black
Nitre Cake—₩ ton $10.00
Ochre—Rochelle, ₩ lb. .01¼@$01¾
Washed Nat Oxf'rd, Lump, ₩ lb. .06¾@.06¾
Washed Nat Oxf'rd, Powder, ₩ lb. .07@.07¼
Golden, ₩ lb. .03@.05
Domestic, ₩ ton $12@$20
Oils, Mineral—
Cylinder, light filtered, ₩ gal. .14@.16
Dark filtered, ₩ gal. .10@.13
Extra cold test, ₩ gal. .20@.24
Dark steam refined, ₩ gal., .07½@.12
Phosphorus—₩ lb. .50@.55
Precip., red, ₩ lb. .80@.85
white, ₩ lb. .85@.90
Platinic Chloride—Dry, ₩ oz $7
Plumbago—Ceylon, ₩ lb. .04@.05
American, ₩ lb. .05@ 07
Potassium—Cyanide, ₩ lb., C. P. 67%, ₩ lb. .52
mining .40
Bromide, domestic, ₩ lb. .28@.32
Chlorate, English, ₩ lb. .18@.18¼
Chlorate, powdered, English, ₩ lb. .18½@.19
Carbonate, ₩ lb., by casks, 82% .04½@.05
Caustic, ₩ lb., pure slick .05½@.06
Iodide, ₩ lb. $2.58@$2.80
Nitrate, refined, ₩ lb. .06@.08
Bichromate, ₩ lb. .10@.11¼
Yellow Prussiate, ₩ lb., 24½c. contr., 25c. single casks. .39@.45
Red Prussiate, ₩ lb. .39@.45
Pumice Stone—Select lumps, ₩ lb. .03½@.15
Original cks., ₩ lb. .01¼@.02
Powdered, pure, ₩ lb. .01¼@.01¾
Pyrites—Non-cupreous, p. units. 10@.11
Quartz—Ground. ₩ ton $6.00@$10.00
Rotten Stone, Powdered, ₩ lb. .03¼@.03¾
Lump, ₩ lb. .06@.07
Original cks, ₩ lb. .04½@.05¼
Rubbing stone, ₩ lb. .03¼@.04
Sal Ammoniac—lump, in bbls., ₩ lb. .80¼
Salt—Liverpool, ground, ₩ sack .700
Domestic, fine, ₩ ton $7@$7.50
Common, fine, ₩ ton $4.50@$5
Turk's Island, ₩ bush .26@.28
Salt Cake—₩ ton $10.00@$15.00
Saltpeter—Crude, ₩ lb. .03¼@.04
Soapstone—Ground, ₩ ton $6@$
Block and slab according to size.
Sodium—Prussiate, ₩ lb. .22@.24
Phosphate, ₩ lb. .04@.05
Stannate, ₩ lb. .06@.12
Tungstate, ₩ lb. .30@.35
Hyposulphite, ₩ cwt., in casks $1.70@$1.80
Strontium—Nitrate, ₩ lb. .03¼@.06
Sulphur—Roll, ₩ lb. .01½@.02¼
Flour, ₩ lb. .01¾@.02
Sylvinit, 27@35%, S.O.P., per unit, 3.75
Talc—Ground French, ₩ lb. .01¼@.01¾
American No. 1, ₩ lb. .01¼@.01¾
American No. 2 .00[illegible]
Terra Alba—French, ₩ lb. .65@.70
English, ₩ lb. .65@.80
American, No. 1, ₩ lb. .60@.80
American, No. 2 ₩ lb. .40@.50
Tin—Crystals, in kegs or bbls. .14@.15
feathered or flossed. .20
Muriate, single .07@.12
Double or strong, 54° B. .10@.15
Oxymur, or nitro .19
Vermillion—Imp. English, ₩ lb. .80
Am. quicksilver, bulk .57 @.59
Am. quicksilver, bags .58 @ .60
Chinese .85 @$1.00
Trieste .90 @ .95
American .11½@ .12
Zinc White—Am., Dry, ₩ lb. .04½@.05
Antwerp, Red Seal, ₩ lb. .06¼@.07
Paris, Red Seal, ₩ lb. .07¾@.08
Muriate solution .06
Sulphate crystals in bbls., ₩ lb. .03@.03¼

THE RARER METALS.

The prices given below are the prices in Germany, and are per gramme except where otherwise stated:

Arsenic (metallic), per kilo $0.25
Barium (ex amalgam) 2.12
" (per electrol.) 7.75
Bismuth (metallic), per kilo 6.25
Cadmium (metallic), " 2.75
Calcium (per electrol.) 5.25
Cerium (pulv.) 2.25
" (fusum in globulis) 5.50
Chromium (fus.) .40
" (cryst.) .75
Cobalt (metallic), per kilo 10.00
" (pure), per kilo 40.00
Didymium (pulv.) 5.50
Erbium-Yttrium (oxydat.) 10.00
Gallium (cryst.) 100.00
Germanium (fus.) 37.50
" (pulv.) 35.00
Glucinum (pulv.) 7.00
" (cryst) 10.75
Indium
Iridium (fusum) 1.25
Lanthanum (pulv.) 6.00
" (per electrol.) 11.00
Lithium (in glob.) 5.00
" (wire) 6.25
Manganese (fusum) .25
Molybdenum (pulv.) 12½
Niobium (pulv.) 4.25
Osmium 1.00
Palladium (wire) .06
" (pulv.) 1.00
Potassium (metal), per kilo 27.50
Rhodium 1.63
Ruthenium 2.50
Rubidium 6.25
Selenium (cryst.) .50
" (precipitates) .62½
Strontium (per electrol.) 7.25
" (ex amalgam) 3.25
Tantalum 4.75
Tellurium (fusum) .50
" (precipitates) .22½
Thallium .03¾
Titanium 1.13
Tungsten (pure) .05
Uranium 1.00
Vanadium 4.00

DIVIDEND-PAYING MINES.

	Name and Location of Company.		Capital Stock.	Shares. No.	Par	Assessments Total Levied	Assessments Date and amount of last.			Dividends Total paid.	Dividends Date & amount of last.		
1	Adams, s. L. C.	Colo.	$1,500,000	150,000	$10	*				$637,500	Jan.	1892	.25
2	Alaska-Treadwell, g.	Al'ska	5,000,000	200,000	25					2,050,000	July.	1894	.75
3	Alice, s.	Mont.	10,000,000	400,000	25	*				975,000	Nov..	1891	06¼
4	Amador, s.	Cal.	1,250,000	250,000	5	*				31,250	Aug..	1890	.12½
5	American, G.	Colo..	3,000,000	300,000	10	*				225,000	Mar..	1892	.05
6	American Belle, s. & G. C	Colo.	2,000,000	400,000	5	*				50,000	April	1891	.12½
7	Americ'n & Nettie, G. & S	Colo..		300,000						175,000	Mar..	1892	.05
8	Atlantic, C.	Mich.	1,000,000	40,000	25	280,000	April	1875	$1.00	700,000	Feb..	1891	.00
9	Argyle, G.	Colo..	1,000,000	1,000,000	1	*				30,000	Mar	1891	.01
10	Aspen Mg. & S., s. L.	Colo..	2,000,000	200,000	10	*				900,000	July.	1894	.10
11	Aurora, I.	Mich..	2,500,000	100,000	25					650,000	Feb..	1893	2 00
12	Badger, s	Ont...	250,000	50,000	*	*				37,500	Mar.	1890	.25
13	Bald Butte	Mont.	250,000	250,000	1	*				295 000	Oct.	1894	.75
14	Bangkok C. Bell, s. L.	Colo..		600,000	1					53,510	Jan..	1895	.01
15	Bates Hunter, s. & G.	Colo..	1,000,000	1,000,000	1					67,500	Dec..	1891	.00½
16	Belden, F. E., m.	N. H.	500,000	100,000	5	*				126,113	Jan	1895	.05
17	Belle Isle, s.	Nev..	10,000,000	100,000	100	280,271	Sept.	1893	.10	300,000	Dec..	1879	.25
18	Belcher, s. G.	Nev..	10,400,000	104,000	100	3,262,900	Nov.	1893	.20	15,397,000	April	1876	1.00
19	Bellevue, Idaho, s. L.	Idaho	1,250,000	125,000	10	120,000	Dec..	1889	.25	200,000	Jan..	1890	.10
20	Best Friend	Colo.	1,000,000	1,000,000	1	*				90,000	Feb..	1892	.01
21	Bi-Metallic, s. G.	Mont.	5,000,000	200,000	25					1,630,000	June	1893	.10
22	Bodie Con., G. I.	Cal..	10,000,000	100,000	100	714,990	July	1893	.15	1,052,572	Nov..	1894	.25
23	Boston & Mont., G.	Mont.	2,500,000	250,000	10	*				750,000	June	1886	.15
24	Boston & Mont., C. & S.	Mont.	3,125,000	125,000	25	*				2,325,000	Nov..	1894	1 00
25	Brotherton, I.	Mich.	2,000,000	80,000	25	*				120,000	Mar..	1893	.50
26	Bulwer, G.	Cal..	10,000,000	100,000	100	155,000	July	1893	.15	190,000	Oct..	1892	.05½
27	Bunker Hill & S. s. L.	Idaho	3,000,000	300,000	10	*				150,000	Oct..	1888	.06
28	Caledonia, G.	Dak..	1,000,000	100,000	100	595,000	May.	1885	.15	192,000	Oct..	1890	.08½
29	Calumet & Hecla C	Mich..	2,500,000	100,000	25	1,200,000				40,850,000	Aug.	1894	5 00
30	Centen'l-Eureka, s. L.	Utah.	1,500,000	30,000	50	30,000	Mar.	1888	1.00	870,000	Oct..	1894	.50
31	Central, C.	Mich..	500,000	20,000	25	100,000	Oct..	1861	.65	1,970,000	Feb..	1891	1.00
32	Champion, G	Cali	340,000	34,000	10	150,000				183,995	July	1894	.10
33	Chrysolite, s. L.	Colo..	10,000,000	200,000	50	*				1,650,000	Dec..	1884	.25
34	Cœur D'Alene, s. L.	Idaho	5,000,000	500,000	10					340,000	June	1893	.03
35	Colorado Central, s. L.	Colo..	2,750,000	275,000	10	*				502,661	April	1893	.05
36	Commonwealth, s.	Nev..	10,000,000	100,000	100	200,000	Nov.	1893	.10	30,000	Nov.	1890	.20
37	Confidence, s. L.	Nev...	2,496,000	24,960	100	1,589,550	Aug..	1892	.50	199,680	April	1889	1.00
38	Cons. Cal. & Va., s. G	Nev...	21,600,000	216,000	100	216,000	Dec..	1892	.50	3,750,000	Dec	1894	.2.
39	Contention, s.	Ariz..	12,500,000	250,000	50					2,637,500	Aug.	1892	.20
40	Cook's Peak, s.	N. M..	2,000,000	200,000	10					119,532	Nov.	1892	.05
41	Cop. Queen Con., C.	Ariz.	2,000,000	200,000	10					1,760,000	Nov..	1894	.25
42	Coptis	Nev.	10,000,000	100,000	100					67,000	July..	1892	.12
43	Cortes, s.	Nev.	1,500,000	300,000	05	*				687,000	Mar..	1892	.50
44	Crescent, s. L. G.	Utah.	15,000,000	600,000	25	60,000	Oct	1892	.10	238,000	Oct..	1888	.03
45	Crown Point, G. & S.	Nev...	10,000,000	100,000	100	2,750,000	June	1893	.25	11,898,000	Jan..	1875	.00
46	Daly, s. L	Utah.	3,000,000	150,000	20					2,850,000	May..	1893	.25
47	+Deadwood-Terra, G.	Dak..	5,000,000	200,000	25	*				1,140,000	Sept	1892	08
48	Delamar, G. & S	Idaho	2,000,000	400,000	25					1,450,000	July..	1894	.25
49	Derbec B. Grav., G.	Cal..	10,000,000	100,000	100	100,000	Sept.	1892	.10	265,000	Mar	1894	.05
50	Dexter, G. & S	Nev..	1,000,000	100,000	10					165,000	July	1893	.25
51	Elkhorn, S.	Mont.	1,000,000	200,000	5	*				1,370,176	Dec	1894	.18
52	Elkton	Colo..	500,000	500,000	1					30,000	Aug..	1894	.01
53	Enterprise, S.	Colo..	2,500,000	500,000	5	*				850,000	June.	1893	.25
54	Eureka Con., S. L. G.	Nev...	1,000,000	50,000	100	550,000	June	1889	.50	5,112,500	Jan	1892	.25
55	Evening Star, S. L.	Colo..	500,000	50,000	10	*				1,437,500	Dec.	1889	.25
56	Father de Smet, G.	Dak..	10,000,000	100,000	100	200,000	Nov..	1878	1.00	1,125,000	Dec..	1885	.20
57	Franklin, C.	Mich..	1,000,000	40,000	25	220,000	June	1871		1,24,000	Dec..	1893	2.00
58	Glengarry	Mont.	1,000,000	100,000	10					10,000	June.	1891	.10
59	Golden Reward	S. Dak	1,250,000	250,000	5					100,000	July..	1894	.05
60	Gould & Curry, s. G.	Nev...	10,800,000	108,000	100	4,688,400	Oct..	1893	.10	3,826,800	Oct..	1870	10.00
61	Grand Prize, s.	Nev...	10,000,000	100,000	100	785,000	Jun..	1890	.30	495,000	Mar.	1884	.25
62	Granite Mountain, s.	Mont.	10,000,000	400,000	25					12,120,000	July.	1892	.20
63	Great Western, L. Q.	Cal..	5,000,000	50,000	100					988,366	Nov.	1893	.25
64	Hale & Norcross, G. & S.	Nev...	11,200,000	112,000	100	5,646,800	June	1893	.50	1 822,000	Aug	1888	.50
65	Hecla Con., S. G. L. C.	Mont.	1,500,000	30,000	50					2,010,000	Dec	1894	.50
66	Hel'a Mg. & Red. S. L. G.	Mont.	3,315,000	663,000	5	*				197,970	July.	1886	.06
67	Helena & Frisco, S. L.	Idaho	2,500,000	500,000	5					170,000	July.	891	.02
68	Helena & Victor	Mont.	1,000,000	200,000	5					80,000	May.	1892	.05
69	¶ Holmes, S.	Nev...	10,000,000	100,000	100	345,000	Mar.	1890	.25	75,000	Apr..	1892	.25
70	Homestake, G.	Dak..	12,500,000	125,000	100	200,000	July.	1878	1.00	5,337,500	Dec	1894	.20
71	Hope, S.	Mont.	1,000,000	100,000	10	*				383,250	Oct	1894	.25
72	Horn-Silver, S. L.	Utah.	10,000,000	400,000	25	*				4,987,500	July.	1894	.12½
73	Idaho, G.	Cal..	310,000	3,100	100					5,489,000	Sept.	1893	2.50
74	Illinois, S.	N. M..	100,000	100,000	1	*				45,000	April	1889	.20
75	Iron Mountain, S.	Mont.	5,000,000	500,000	10	*				295,000	Nov..	1894	.02
76	Iron-Silver, S. L.	Colo..	10,000,000	500,000	20	*				2,500,000	April	1889	.20
77	Jackson, G. & S.	Nev...	5,000,000	50,000	100	247,500	Mar..	1893	.20	60,000	Jan.	1891	.10
78	Kearsarge, C.	Mich..	1,000,000	40,000	25	190,000	Oct..	1887	1.00	90,000	Jan	1890	2.00
79	Kennedy	Cal..	10,000,000	100,000	100					1,410,000	July	1894	.45
80	Kentuck, S. G.	Nev..	3,000,000	30,000	100	454,180	Oct..	1891	.15	1,350,000	Dec.	1886	.10
81	Leadville Con., S. L.	Colo..	4,000,000	400,000	10	*				516,000	Feb..	1892	.03
82	Lexington, G. S.	Mont.	4,000,000	40,000	100	*				652,200	July.	1893	.90
83	Little Chief, S. L.	Colo..	10,000,000	200,000	50	*				820,000	Dec..	1890	.05
84	Maid of Erin	Colo..	3,000,000	600,000	5					708,500	April	1893	.25
85	Mammoth, S. L. C.	Utah	10,000,000	400,000	50	110,000		1882	.25	1,040,000	Dec..	1891	.10
86	Maxfield	Utah	3,000,000	300,000	10					117,000	April	1892	.03
87	Mayflower, D. gravel	Cal..	1,200,000	60,000	20					308,000	July..	1894	.10
88	Minas Prietas, G. & S.	Mex..	1,000,000	100,000	10	*				350,000	Dec..	1890	.50
89	Minnesota, C.	Mich..	1,000,000	40,000	25	420,000	April	1886	1.00	1,820,000	Mar.	1876	
90	Minnesota Iron, L.	Minn.	16,500,000	165,000	100					2,745,000	April.	1892	.50
91	Mollie Gibson, S.	Colo..	5 000,000	1,900,000	5	*				4,030,000	Dec.	1894	.15
92	Monitor, G.	S. Dak	2,500,000	250,000	10					45,000	Oct..	1890	.03
93	Mono, G.	Cal..	5,000,000	50,000	100	797,500	Feb..	1893	.25	12,500	Mar	1886	.25
94	Montana, Lt., G. & S.	Mont.	3,300,000	660,000	5	*				2,619,075	June.	1891	12½
95	Moose	Colo..	600,000	600,000	1					72,000	Nov.	1894	.02
96	Morning Star, S. L.	Colo..	1,000,000	100,000	10					1,025,000	Dec..	1891	.25
97	Morning Star Drift, G	Cal..	240,000	2,400	100					242,400	July..	1894	4.00
98	Moulton, S. G.	Mont.	2,000,000	400,000	5	*				410,000	Nov.	1892	.07½
99	Mt. Diablo, S.	Nev..	5,000,000	50,000	100	137,500	June	1880	2.00	225,000	Nov..	1893	.30
100	Napa, Q.	Cal..	700,000	100,000	7					66,000	Jan..	1893	.10
101	Navajo, G. & S.	Nev.	10,000,000	100,000	100	538,714	Sept.	1893	.10	226,11	April	1889	.10
102	New Guston, S.	Colo..	550,000	110,000	5					1,877,500	April	1892	.75
103	North Banner Con.	Cal..	1,000,000	100,000	10					20,000	July..	1891	.05
104	North Commonw'th	Nev..	10,000,000	100,000	10	90,000	Jan.	1893	.10	25,000	June.	1891	.25
105	N. Hoover Hill, G. & S.	N. C	300,000	120,000	2½	*				30,000	Dec..	1885	.06½
106	North Belle Isle, S.	Nev..	10,000,000	100,000	100	513,675	April	1893	.10	230,000	May	1888	.50
107	North Star, G.	Cal..	1,000,000	100,000	10	20,000		1885	.02	450,000	June	1893	.50
108	Omaha Cons., G.	Cal..	2,400,000	24,000	100					97,200	July..	1894	.15
109	Ontario, S. L.	Utah	15,000,000	150,000	100					13,175,000	Oct..	1892	.50
110	Ophir, G. & S.	Nev..	10,000,000	100,000	100	4,391,040	July	1893	.25	1,595,800	Jan..	1880	1.00
111	Osceola, C.	Mich..	1,250,000	50,000	25	480,000	April	1876	1.60	1,847,500	Dec..	1892	1.00
112	Pacific Coast, S.	Cal..	1,500,000	15,000	100					422,500	July	1893	1.00
113	Parrot, C.	Mont.	1,800,000	180,000	10					1,569,000	June	1893	.10
114	Petro	Utah	10,000,000	10,025	100					17,500	July..	1891	.75
115	Plumas Eureka, G.	Cal..	1,406,250	140,600	10					2,696,295	Oct...	1893	.18
116	Plymouth Con, G.	Cal..	5,000,000	100,000	10	*				2,280,000	Feb.	1888	.40
117	Poorman; G. & S.	Idaho	375,000	300,000	125	*				68,280	Sept.	1892	
118	Portland	Colo..	3,000,000	3,000,000	1					90,000	July.	1894	.03
119	Quicksilver, pref., Q.	Cal..	4,300,000	43,000	100					1,823,911	June	1891	1.25
120	" com., Q	Cal..	5,700,000	57,000	100					643,867	July	1892	.40
121	Quincy, C.	Mich..	1,250,000	50,000	25	200,000	Dec..	1862		7,050,000	Aug..	1894	4.00
122	Red Cloud	Idaho	1,000,000	200,000	5					153,000	Dec	1892	.10
123	Retriever, L.	S. Dak	1,250,000	250,000	5					20,000	Aug..	1891	.03
124	Rialto, G.	Colo..	300,000	300,000	1	*				50,250	April	1892	.01½
125	Richmond, S. L.	Nev..	1,350,000	54,000	25	*				4.359,887	Oct...	1893	.25
126	Rico-Aspen	Colo..	5,000,000	1,000,000	5					325,000	Nov..	1894	.02½
127	Ridge, C.	Mich..	1,250,000	50,000	25	219,939	Mar.	1886	50	99,785	Feb..	1894	.50
128	Robinson Con., S. L.	Colo..	10,000,000	200,000	50	*				585,000	Mar.	1886	.05
129	Savage, S.	Nev.	11,200,000	112,000	100	6,966,000	June	1893	.25	4,460,000	June	1869	3.00
130	Sierra Buttes, G.	Cal..	2,225,300	122,500	10					1,559,333	Oct...	1893	.12½
131	Sierra Nevada, S. G.	Nev..	10,000,000	100,000	100	6,521,910	Aug.	1893	.30	102,000	Jan.	1871	1.00
132	Silver Cord, S. L. G.	Colo..	4,500,000	450,000	10					265,000	April	1889	.10
133	Silver King, S.	Ariz.	10,000,000	100,000	100	97,479	Aug..	1892	.25	1,950,000	July	1887	.25
134	Silver Mg. of L. V., S. L.	N. M..	500,000	500,000	1					300,000	Dec..	1891	4.05
135	Small Hopes Con., S.	Colo..	5,000,000	250,000	20	*				3,225,000	Oct...	1895	.10
136	Standard, G. & S.	Cal..	10,000,000	100,000	100	100,000	June	1890	.50	3,741,159	July.	1894	.10
137	Swansea, G. & S.	Colo..	600,000	60,000	10					39,000	Sept.	1893	.10
138	Tamarack, C.	Mich..	1,250,000	50,000	25	520,000	April	1885	3.00	4,070,000	Dec.	1894	4.00
139	Trinity Riv'r Hydr., G	Colo..	500,000	500,000	1	*				37,500	Apr..	1894	.00½
140	Union	Colo..	1,250,000	1,250,000	1					31,250	Dec..	1894	.00½
141	United Verde, C.	Ariz.	3,000,000	300,000	10	*				207,500	Jan..	1894	.10
142	Victor, G	Colo.	1,000,000	200,000	5					215,000	Dec.	1894	.07½
143	Ward Con., S.	Colo..	2,000,000	200,000	10					20,000	Dec..	1889	.05
144	W. Y. O. D.	Cal..	60,000	30,000	2	22,500	May.	1891	.10	78,000	July..	1894	.10
145	Yankee Girl, ‡	Colo.	1,300,000	260,000	5					1,405,000	Sept.	1893	1.50
146	Yellow Jacket, G. & S.	Nev.	12,000,000	120,000	100	556 000	July.	1893	.25	2,184,000	Aug..	1871	1.50
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NON-DIVIDEND-PAYING MINES.

	Name and Location of Company.		Capital Stock.	Shares. No.	Par	Assessments. Total levied.	Assessments. Date and am't of last.		
1	Alliance, S. G.	Utah.	$100,000	100,000	$1	$120,000	Feb..	1891	.10
2	Allouez, C.	Mich.	2,000,000	80,000	25	1,424,937	Oct..	1891	.10
3	Alpha Con., G. & S.	Nev..	3,000,000	30,000	100	209.000	Sept.	1892	
4	Alta, S.	Nev..	10,080,000	100,800	100	3,369,880	Jan.	1892	.10
5	American Flag, S.	Colo..	1,250,000	125,000	1	300,000	June	1887	
6	Anchor, S. L. G.	Utah.	3,000,000	150,000	5	560,000	July.	1893	.5
7	Barcelona, G.	Nev.	5,000,000	200,000	5	*			
8	Belmont, G.	Cal..	500,000	500,000	100	*			
9	Belmont, S.	Nev..	5,000,000	50,000	100	735,000	April	1884	.10
10	Best & Belcher, S. G.	Nev..	10,080,000	100,800	10	2,405,275	Aug..	1892	.25
11	Black Oak, G.	Cal...	3,000,000	300,000	100	*			
12	Brownlow, G.	Colo..	250,000	250,000	5				
13	Brunswick, G.	Cal..	2,000,000	400,000	5				
14	Bullion, S. G.	Nev.	10,000,000	100,000	100	2,890,000	Aug.	1892	.25
15	Butte & Boston, C. & S.	Mont.	5,000,000	200,000	10				
16	Butte Queen, G	Cal...	1,000,000	100,000	1	6,000	Jan..	1892	
17	Calaveras, G.	Cal..	500,000	500,000	5				
18	Calaveras Con., G.	Cal..	800,000	160,000	10				
19	California, G.	Cal..	1,000,000	100,000	5	9,000	Mar..	1892	
20	California Con. L. Q.	Cal....	2,250,000	450,000	10				
21	Challenge Con., G. & S.	Nev..	5,000,000	50,000	10				
22	Challar, S. G.	Nev..	11,200,000	112,000	2	1,820,000	May..	1892	.5
23	Colchis, S. G.	N. M..	500,000	150,000	5				
24	Colorado, S.	Colo..	1,625,000	325,000	1				
25	Comstock, S.	Utah.	1,250,000	250,000	100				
26	Comstock Tun.	Nev..	10,000,000	100,000	100	35,000	Mar.	1887	.10
27	Con. Imperial, G. & S	Nev..	5,000,000	50,000	50	2,062,500	Jan..	1892	.25
28	Con. New York, S. G.	Nev..	5,000,000	100,000	100	110,000	Mar..	1892	.10
29	Con. Pacific, G.	Cal..	6,000,000	60,000	10	198,000	June	1890	.10
30	Crescent, S. L.	Colo..	3,000,000	300,000	100	*			
31	Crocker, S.	Ariz.	10,000,000	100,000	1	165,000	Aug.	1892	.05
32	Crowell, G.	N. C.	500,000	500,000	1				
33	Dahlonega, G	Ga....	250,000	250,000	10	*			
34	Decatur, S	Colo..	1,500,000	300,000					
35	Denver City S.	Colo..	5,000,000	500,000	11	*			
36	Denver Gold, G.	Colo.	500,000	60,000	5				
37	Dickens-Custer, S.	Idaho	4,100,000	420,000	5				
38	Durango, G.	Colo..	500,000	500,000	1	*			
39	El Dorado, G.	Cal..	1,000,000	250,000	4	*			
40	Emma, S	Utah.	625,000	500,000	125				
41	Emmons, S. L.	Colo..	2,000,000	2 000,000	1				
42	Empire, S.	Utah	10,000,000	100,000	100				
43	Eureka Tunnel, S. L.	Nev...	10,000,000	100,000	100	*			
44	Exchequer, S. G.	Nev...	10,000,000	100,000	100	940,000	Jan..	1892	.25
45	Found Treasure, G. & S.	Nev...	10,000,000	100,000	100	130,500	Jan..	1892	.50
46	Gogebic I. Syn., I.	Wis..	5,600,000	200,000	25				
47	Gold Cup, S.	Colo..	500,000	500,000	1	*			
48	Golden Era, S	Mont.	1,000,000	200,000	10	*			
49	Gold Flat, G.	Cal...	1,000,000	100,000	10	5,000	Mar..	1892	.05
50	Gold Rock, G.	Cal...	1,000,000	500,000	2				
51	Golden FeatherCu., G	Cal...	900,000	180,000	5				
52	Goodyear G. & S. L	Mont.	1,000,000	200,000	5	13,000	Feb..	1892	.01
53	Grand Duke, S.	Colo..	800,000	80,000	10				
54	Gregory Con., G.	Mont.	3,000,000	300,000	10				
55	Harlem M. & M. Co., G.	Cal...	1,000,000	200,000	5				
56	Hartery Con., G.	Cal...	1,000,000	100,000	10	22,000	Oct..	1890	.05
57	Hartshorn, G. & L.	S. Dak	1,250,000	250,000	5	8 750	Sept.	1891	.00¼
58	Head Cent. & Tr., S. G	Ariz.	10,000,000	100,000	100	16,981	Mar..	1892	.08
59	Hector, G.	Cal...	1,500,000	300,000	5	45,000	Jan..	1889	.15
60	Himalaya, G. & L.	Utah.	1,800,000	80,000	10	12,800	Oct..	1892	.00¼
61	Holywood	Cal...	200,000	100,000	2				
62	Huron, C.	Mich..	1,000,000	40,000	25	280,000	May.	1887	1.00
63	Idaho, G. & S	Idaho	1,250,000	250,000	5				
64	Ingalls, G	Colo..	100,000	20,000	5				
65	Ironton, I.	Wis..	1,000,000	40,000	25				
66	Iroquois, C.	Mich..	1,250,000	50,000	25				
67	Kentuck Con.	Nev..	10,500,000	105,000	00	57,750	July	1892	.10
68	Julia Con., G. & S.	Nev...	11,000,000	110,000	100	1,463,000	Jan..	1889	.10
69	Justice, G. & C	Colo.	500,000	500,000	1	*			
70	Lacrosse, G.	Colo..	1,000,000	100,000	10	*			
71	Little Josephine, S.	Colo..	250,000	50,000	5				
72	Lone Star Cons., G.	Cal...	500,000	500,000	1	10,000	April	1892	.60¼
73	Madeleine, G. & L.	Colo..	750,000	50,000	1	4,500	Feb.	1892	.06¼
74	Mammoth Gold, G.	Ariz..	2,500,000	500,000	5	*			
75	Mayflower Gravel, G.	Cal...	1,000,000	100,000	10	*			
76	Mexican, G. & S.	Nev...	10,000,000	100,000	100	2,917,560	ct..	1892	.50
77	Michigan, G & S	Mich..	2,500,000	100,000	25	40,000	Mar..	1892	
78	Mike & Starr, S. C.	Colo..	1,000,000	200,000	5	*			
79	Milwaukee, S.	Mont.	500,000	500,000	1	*			
80	Modoc Chief, I. S. G.	Idaho	1,000,000	200,000	5	5,000	Jan..	1892	.00¼
81	Monitor, G.	Colo..	100,000	100,000	1	12,500	May.	1891	.01
82	Montreal, G. & S. L.	Utah.	750,000	150,000	5	4,500	Feb..	1892	.00¼
83	Mutual Mg. & Sm.	W'sh.	100,000	100,000	1	*			
84	Neath, G.	Colo.	1,000,000	100,000	10				
85	Nelson	Cal...	50,000	10,000	5				
86	Nevada Queen, S.	Nev...	10,000,000	100,000	100	200,000	Oct..	1889	.25
87	New Gold Hill	N. C..	1,750,000	350,000	5				
88	New Pittsburg, S. L.	Colo.	2,000,000	200,000	10	*			
89	North Standard, G.	Cal...	10,000,000	100,000	100	20,000	Nov		
90	Occidental Con., G. & S		10,000,000	100,000	100	245.000	April	1892	.25
91	Oneida Chief, G.	Cal...	500,000	125,000	100	*			
92	Oriental & Miller, S.	Nev...	10,000,000	400,000	100				
93	Original Keystone, S.	Nev..	10,000,000	100,000	100	250.000	Mar..	1892	.10
94	Osceola, G.	Nev...	5,000,000	500,000	10	*			
95	Overman, G. & S.	Nev...	11,520,000	115,200	100	4,001 340	May.	1892	.10
96	Pay Rock, S	Colo..	1,000,000	200,000	5				
97	Peer, S.	Ariz..	10,000,000	100,000	100	190 000	Feb..	1892	.10
98	Peerless, S.	Ariz..	10,000,000	100,000	100	405 000	Oct..	1890	.15
99	Pennsylva'a Cons., G	Cal...	5,150,000	515,000	10	36 000	Feb..	1892	.10
100	Phœnix, G.	Ariz..	500,000	500,000	1				
101	Phœnix Lead, S. L.	Colo..	100,000	100,000	2				
102	Pilgrim, G	Cal..	600,000	300,000	2				
103	Ploche M. & R. S. G. L.	Utah.	20,000,000	000,000	10				
104	Poorman, Ltd., S. L.	Idaho	250,000	50,000	5				
105	Potosi, S.	Nev...	11,200,000	112,000	100	1,573,000	Mar..	1890	.50
106	Proustite, S.	Idaho	250,000	250,000	1	*			
107	Puritan, S. G.	Colo..	1,500,000	150,000	10	*			
108	Quincy, C	Colo..	3,000,000	300,000	10				
109	Rainbow, G.	S. Dak	1,250,000	250,000	5	4.250	July.	1892	.00¼
110	Rappahannock, G. & S.